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The influence of peer-assisted learning on enhancing the learning of undergraduate nursing students in clinical practice

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THE INFLUENCE OF PEER-ASSISTED LEARNING ON ENHANCING THE LEARNING OF UNDERGRADUATE NURSING STUDENTS IN CLINICAL PRACTICE

by

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AUTHOR'S DECLARATION

At no time during the registration for the degree of Doctor of Philosophy has the author been registered for any other University award without prior agreement of the Doctoral College Quality Sub-Committee.

Work submitted for this research degree at the University of Plymouth has not formed part of any other degree either at the University of Plymouth or at another establishment.

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ABSTRACT

THE INFLUENCE OF PEER-ASSISTED LEARNING ON ENHANCING THE LEARNING OF UNDERGRADUATE NURSING STUDENTS IN CLINICAL PRACTICE

Aim

The aim of this study was to explore the influence of peer-assisted learning (PAL) on enhancing the learning of undergraduate nursing students in clinical practice.

Background

PAL is an initiative whereby students acquire knowledge and skills through the active help provided by peers. PAL currently exists within academic and clinical skills settings to support the enhancement of student knowledge. Despite this, there has been limited exploration of PAL in the area of nursing clinical practice.

Methods

A three-phase approach was adopted. Firstly, a qualitative systematic review on the experiences of undergraduate nursing student in PAL in clinical practice was conducted. An ethnographic approach was used in Phase two to observe student nurses engaging in PAL, across two fields of child health and adult nursing within two clinical settings. In the final Phase, a meta-ethnography was conducted to synthesise all findings within the previous two phases and develop a new conceptual model for PAL.

Findings

Three main themes arose from the first two phases that then informed Phase three. Here a conceptual model for PAL was created, underpinned by four themes and six sub-themes: 1) ‘Social’ whereby ‘connecting with peers’ is an important part in peer-assisted learning. 2) ‘Enabling’ each other through ‘collaborative support for advice

and guidance' and 'reducing anxiety/increasing confidence.' 3) 'Organisational' aspects are important in 'establishing structure and navigating practice' as well as 'establishing the role of the PAL.' 4) Finally 'learning' knowledge and skills through 'sharing of practice experience' and 'enhancing knowledge of care.'

Conclusions

The study adds new knowledge about the value of PAL among nursing students in clinical practice and provides a conceptual model that has never before existed. By learning together, student nurse peers support each other, to learn and develop the skills required to make them into proficient nurses of the future.

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CHAPTER 1: INTRODUCTION

My interest in Peer Assisted Leaning (PAL) initially developed from personal experience in both the academic and clinical environment. During time spent in practice as a clinical educator, I noted that alongside the input of nursing mentors there was a hidden culture taking place amongst undergraduate student nurses, who found themselves allocated to the same placement area. I witnessed student nurses interacting together and supporting each other in their learning when the opportunities presented themselves. I was reminded of my own training and those previous experiences of working alongside other students, being in the same boat and being more confident to ask them queries I felt were too trivial to ask my qualitied nursing mentor.

In 2012 I joined the university as lecturer in Nursing: Child Health. Within this role I was given the opportunity to support student nurses within a new project known as the peer-assisted learning scheme (PALS) at the University of Plymouth. Due to my previous interest in this form of student to student learning, I welcomed the opportunity to take on a role as an academic co-ordinator. The aim of this scheme was to utilise students from within the second year of their university education to support the integration and transition of new students into academic programmes. Due to the complexities and dynamics of nursing programmes, PALS provided a positive approach to students supporting the learning of others who were in their position only a year ago.

Within my role as the academic co-ordinator for PALS, I noticed the measurable benefits of senior nursing students providing other nursing students with support and

guidance in the academic environment to enhance their learning. With these benefits being self-evident I embarked upon developing the use of PAL within clinical skills teaching, to enable senior (second year student nurses) to support clinical skills facilitation of first year student nurses within clinical skills programmes. Similar to the academic environment, PAL in clinical skills was evaluated to be a positive addition to the students learning, with benefits for both junior and senior students. These benefits have also been reported among medical student peers teaching clinical skills. As my interest in PAL grew, I was keen to further explore the concept in clinical practice; the driver for this was my own personal experiences as a student and mentor. I had recently embarked upon a Research Masters programme and completed systematic review training; this led to the development of a question to be answered through a systematic review, which explored the experiences of students engaging in PAL within the clinical environment. A preliminary search of the evidence found very few studies related to PAL in clinical practice, therefore, this further presented the need to explore this area in more detail. These opportunities led to the development of Phase one of my research and to designing a small study exploring PAL in clinical settings focusing on Child Health nursing students, which later formed part of Phase two. This study was funded in part by the European Social Fund Cornwall.

It was clear that this work had potential to significantly contribute to the existing body of knowledge and, through the Research Masters, there was the option to transfer from my current programme, to that of a PhD programme. The transfer viva was successfully completed in November 2016. This led to the development of a larger project to further explore the influence of PAL amongst student nurses in clinical

placement, testing the original conceptual themes. Now that the context for the PhD thesis has been provided, the background to this doctoral thesis and a description of the thesis content, which consists of peer reviewed published papers and reports of findings, will now follow.

1.1 Background

Models and paradigms of learning

The goal of undergraduate nurse education is to ensure that opportunities are provided to enable students to become registered nurses with both the knowledge and skills needed to deliver high quality patient care (Westin et al., 2015). This is a shared culture in higher education, to review and implement new approaches to teaching and learning that produce knowledgeable and skilful graduates. This is occurring at a time when the health and social care industry wants students to demonstrate that they have entered and translated into what they have learnt practically and therefore, graduate into a workforce that contributes effectively to society (Zakaria, 2017). However, there are additional aims within nurse education and the nursing profession that include the desire to develop student nurses as critical thinkers, to support decision-making and allow nurses to assess their own experiences and training and apply these to deliver quality of care (Ozturk et al., 2008, Martyn et al., 2014).

Much of the research that has focused on nurse education has tended to explore the traditional methods of how students learn knowledge and skills within the context of

the academic environment (Iwasiw et al., 2009). Many of these traditional methods within the UK are centred upon a behaviourist pedagogical approach, whereby learning is largely content driven, led by the teacher (Macintosh-Franklin, 2016). The emphasis is upon passive learning to achieve the knowledge required and that the teacher's knowledge is often perceived as being superior, with the teacher determining what constitutes as knowledge (Iwasiw et al., 2009 and Macintosh-Franklin, 2016). One of the main criticisms of a behaviorist paradigm is its perception of control, in which the learner is seen as a passive recipient of information or 'puppet', whilst ignoring the importance of human relationships and the social context in which people learn from one another (Quinn, 2013). These approaches have, therefore, been challenged to consider alternative paradigms, such as a student-centred approach, which underpins student learning and encourage deeper learning as well as student engagement (Hockings, 2009).

Over the last 10 years, more studies have begun to explore peer-centred learning methods to encourage student participation in education and promote critical thinking (Parkin, 2006, Baeten et al., 2010). These learning methods are centred upon a constructivist educational paradigm, in which according to Vygotsky, knowledge is not mechanically acquired in the traditional sense, but instead, actively constructed within the constraints and offerings of the learning environment (Liu and Matthews, 2005). Constructivist learning suggests that the learner make sense of new information by building or constructing what they already know from previous life experiences. Therefore, in education, the aim is to capitalise on these student experiences and involve them within the learning process (Hunter and Krantz, 2010).

Within nurse education, this has been proposed as a useful method to provide undergraduate student nurses with the opportunity to actively participate in their learning (Aliakbari et al., 2015).

More recently, studies into theories of how students learn have focused upon the importance of a constructivist paradigm and its constructs for encouraging students to achieve deeper learning (Biggs and Tang, 2011). One of these constructs is the area of social constructivism, whereby learners assemble knowledge through social interaction with others (Burr, 2003). Social constructivism, although loosely defined, has been shown to apply to key domains of learning including knowledge and skills (Philpott and Batty, 2009). Social constructivism considers how individuals construct and apply knowledge in socially facilitated contexts. The learner, as linked to constructivism, is an active participant in the learning process; however, the social environment plays an important role in developing knowledge. Other individuals, within the environment, aim to test the learners understanding, but may also provide alternative views to question viability of knowledge and through adding new constructs to develop this knowledge further (Thomas et al., 2014). Its influence on learning may be through the support and facilitation of others, such as a teacher or educator (Hunter and Krantz, 2010); however, partnership through peer centred-approaches has been an important factor in attainment of knowledge and skills in nurse education when considering the novice to expert model (Benner, 1984, Dumchin, 2010).

One of the key hypotheses of Vygotsky's social constructivism is that of social interaction, which, within this theory, facilitates more learning to be achieved between peers than by students on their own. Evidence has shown that peers provide supportive learning to enable students to develop in their knowledge (Fachikov, 2001). Thus, social constructivism provides a sound theoretical underpinning for PAL and associated schemes to support learning to take place in discourse between student peers in educational settings (Smith et al., 2007, Ginty and Harding, 2014). However, one of the many challenges of this paradigm is in the misinterpretation of this theory against similar terminology such as 'constructivism', 'constructionism' and 'constructive', which are employed idiosyncratically and inconsistently at times, and challenge definition and expert understanding (Raskin, 2002). Furthermore, there are criticism within derivatives of constructivist epistemologies. For example, Vygotsky provides social constructivism as an alternative to Piaget's cognitive constructivism, which focuses more on attainment of knowledge, which is individual and not transmittable from person to person (Lui and Matthews, 2005). For clearer understanding of the correct adoption of such methodology, this thesis considers that Vygotsky's social constructivism aligns best with the questions to be answered and this formed the underpinning theoretical framework linked to PAL in clinical practice.

Peer-assisted learning

One peer-centred approach is peer-assisted learning (PAL), in which students acquire knowledge and skills through the active help provided by status equals or matched companions (Topping, 2005). This is often promoted as a concept of learn

by doing, but encourages shared experiences, study or teaching to achieve learning (Topping and Ehly, 1998). The concept of PAL has been around for many years (Williams and Reddy, 2016). The approach can be traced back to the era of Socrates and Plato who, along with their colleagues, would often share, question and challenge one another's ideas (Topping and Ehly, 1998), a feature aligned within social constructivism (Thomas et al., 2014). Despite the early origins of this concept, its advancement in nurse education has been affected by poor definition and lack of consistency (Secomb, 2008). It has been reported that these barriers often come down to its interchangeable titles (Parkin, 2006, Stone et al., 2013 and Carey et al., 2016). The many aspects of terminology that are associated with PAL, include ''peer teaching'' (Brannagan et al., 2013) ''peer mentoring'' (Li et al., 2010) and ''peer support'' (Aston and Molassiotis, 2003), which create confusion, resulting in clarity being required.

Defining the terminology

The concept of peer teaching relates to a range of formal and informal learning activities that are shared between students who are part of the same programme of study (Priharjo and Hoy, 2011). However, peer teaching has also been used in the same context when referring to peer-assisted learning (Williams et al., 2013). It appears that much of the terminology is often related to the formal and informal circumstances of peers who engage in peer-centred learning as a constructivist paradigm. In the context of peer teaching, formal interactions are categorised as a one-to-one tutoring or mentoring by a more experienced student (Priharjo and Hoy, 2011).

Mentorship was another of the other terms often associated with PAL (Li et al., 2010); however, this is not a model requisite of only formal roles. Mentorship has similarities in peer teaching of a one-to-one relationship, which is often expressed through a more experienced peer or colleague. This person would be responsible for providing the support and encouragement to a protégé within the same area of interest (Tourigny and Pulich, 2005). However, these authors reported that informal examples of mentoring did not only have to be represented by a hierarchical role of a more superior learner at a different stage of study. The informal role of mentor could also be delivered by a less experienced learner or peer at a similar stage of learning. The main similarities that are therefore expressed between PAL and peer mentoring are categorized by shared learning and committing to supporting and developing each person's professional growth (Tourigny and Pulich, 2005 and Topping, 2005).

Peer support, as a term within undergraduate nursing, is limited within the literature and related studies. However, peer support appears to be associated with peer supervision and peer mentorship by either a senior peer, or matched equal (Aston and Molassiotis, 2003, Gilmour et al., 2007). By drawing all of these associated terms together, it could be argued that students who are paired together, whether in formal or informal settings, or with a senior peer or matched equal, have a commonality within peer-assisted learning. It could be said that by looking at the context of each of these terms, they fit within a common goal of developing learning through shared experience, study or being taught to achieve knowledge (Topping and Ehly, 1998).

Peer-assisted learning in nursing education

Williams and Reddy (2016) discussed the importance of Higher Education Institutes (HEIs) in healthcare to deliver a variety of teaching and learning methods to acquire and maintain skills and knowledge. Within their scoping review, they acknowledged PAL as one of these pedagogies to encourage students into the teaching process and promote a social learning atmosphere (Williams and Reddy, 2016). Peer-assisted learning within the context of undergraduate nursing education has shown enhancements in students' skills of communication, critical thinking and self-confidence particularly in theoretical settings (Christiansen and Jensen, 2008, Daley et al., 2008). However, it should be noted that these examples were limited. From Williams and Reddy's (2016) review, they noted that the improvements in academic performance, especially in relation to enhancing the knowledge of senior peers, were largely related to medical students. Despite limited coverage within theoretical settings, many universities have seen the development of Peer-Assisted Learning Schemes (PALS). These schemes have been applied to the field of nursing as well as other academic disciplines, although the ethos of these schemes largely focused on supporting the transition of students from further education into the higher education setting (Hammond et al., 2010).

The focus of PAL within undergraduate nursing education has been widely, and more successfully, used within the simulated clinical skills environment (Stables, 2012). These environments focus on the acquisition of practical skills and simulated learning related to the field of nursing (Dix and Hughes, 2005, Ricketts, 2011). These are often delivered by an educator or academic within a simulated teaching setting,

or clinical skills laboratory set up, to represent and area of practice such as a ward (Ricketts, 2011). Peer-assisted learning within these settings has been implemented to offer support in the facilitation and teaching to achieve acquisition of new clinical skills and knowledge. One of the key learning theories to clinical skills and simulated learning is the student's ability to actively participate in the learning experience and create avenues for reformatting knowledge within the constructivist model. This could potentially indicate its suitability to the environment and opportunity for introducing PAL for shared learning experience (Rothgeb, 2008).

From examples within the evidence, peer-assisted learning was seen to exist more commonly within the context of senior student nurses who supported their junior colleagues (Stables, 2012, Ramm et al., 2015, Dumas et al., 2015). Findings from studies have shown how both groups of student nurses appeared to report improvement in the overall confidence of presenting these skills and in their delivery (Stables, 2012, Ramm et al., 2015). This perceived increase in confidence as well as the development of communication abilities and an enthusiasm to engage in PAL have also been seen in studies observing medical students within the context of clinical skills teaching and simulation (Field et al., 2007, Burke et al., 2007). Further benefits for senior nursing students have been reported how the engagement of PAL in clinical skills enabled them to consolidate their teaching skills (Stables, 2012). One study reported that there had been a noted improvement in the overall performance, of junior students, in clinical skills when taught by senior peers (Dumas et al., 2015). Senior students were able to recognise the importance of developing teaching and mentorship skills. Following engagement with PAL, these senior students were

further able to recognise the transferability of learnt knowledge and skills into clinical practice (Ramm et al., 2015).

Clinical practice/rationale

Despite nursing students spending significant amounts of time learning in clinical settings, there appears to have been minimal exploration of peer-assisted learning in the context of the clinical practice setting (Carey et al., 2016). Within the UK's Higher Education Institutes (HEIs), 50% of student learning takes place within the clinical practice environment, as outlined in the standards for practice by the national Nursing and Midwifery Council (NMC, 2009). Currently, mentors who are registered nurses take on the role of supporting learning and assessing the competence of undergraduate student nurses whilst in clinical practice (NMC, 2009, Casey and Clark, 2011). However, the perceptions of the quality of mentorship are variable as pressures on clinical workload limit the opportunities for students to work together with nurse mentors (Lloyd-Jones et al., 2001, Hurley et al., 2008). At such times, undergraduate student nurses seek out each other for support (Roberts, 2008). A report by the UK's Council of Deans of Health (2016) on educating the nurse of the future noted that students need to be equipped to teach others, not just through mentorship, but also informally in the clinical environment. They determined that this recommendation should be explored within undergraduate education and acknowledged PAL as an area for consideration (Council of Deans of Health, 2016). Therefore, with the gaps identified in the evidence-base for exploring PAL in practice, the challenges of current mentorship systems and the pressures facing

learners and clinicians in clinical practice, there is a need to explore the contribution of PAL within the clinical setting on student learning.

1.2 Aims and objectives

The aim of the study is to explore the influence of PAL on enhancing the learning of undergraduate nursing students in clinical practice.

The objectives are:

1. To explore the extent of learning development across different year groups of students when engaging in PAL.
2. To identify if PAL provides opportunities for optimising education in clinical practice.
3. To identify the types of interactions that occur as part of PAL in the clinical setting.
4. To synthesise the available evidence to develop a conceptual model for PAL.

1.3 Design: phases of research

Figure 1 provides a visual overview of the phases of research within the main body of the thesis. The overarching circular box contains four sections each linked to one of the four objectives of the thesis. The three internal circular boxes each contain titles related to the three main phases of the research process. These were; Phase

one: systematic review, Phase two: ethnographic observations and Phase three: Meta-ethnographic synthesis. The first three objectives are coloured orange and are met through Phase one and two, which are the same colour to represent this. Phase one and two are represented by three exploratory studies, which generated rich data to inform the final Phase. All existing data from Phase one and two were synthesised using meta-analysis in the development of a conceptual model for PAL. This was to drive forward a new way of learning for nursing students within the clinical setting. Objective four, thus links to Phase three and is indicated by the colour blue.

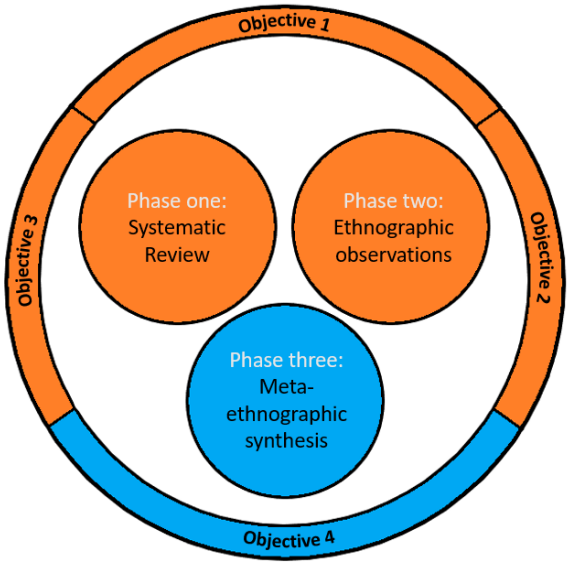

Figure 1: Objectives linked to phases of study

1.3.1 Design: Phase one

Phase one of study presents a systematic review, which provides an in-depth review of the current literature. As indicated in the introduction the concept of peer-assisted learning linked to nursing students in clinical practice was a fairly new and

unstructured model with limited evidence spanning the last decade. The presentation of the systematic review provided a rigorous approach to finding and assessing the quality of existing evidence, which determined aggregated themes and gaps in the literature in inform the next Phase of the study.

1.3.2 Design: Phase two

Following the systematic review in Phase one, recommendations were made towards conducting further research to explore PAL in nursing students in the clinical setting. This led to Phase two of the study utilising ethnographic non-participant observations to explore PAL among groups of nursing students from the fields of Child Health and Adult nursing, across two sites. Phase two was divided into three stages of ethnographic observations.

Table 1 provides an overview of the stages within Phase two of the research process. Stage one is indicated by site one, where ethnographic observations were undertaken with student nurses within the field of child health. Stage two indicates observations that were undertaken at site two with a different participant group of student nurses within the field of child health. Stage three remains within site two, but indicates observations that were undertaken with a new group of participants of student nurses within the field of adult nursing.

Table 1: Overview of stages linked to phase two of the study

Phase two: Ethnographic observations (stages)	
Stage one	**Site one: Royal Cornwall Hospital Trust**
	Nursing Students: BSc(hons) Child Health Nursing
Stage two	**Site two: Plymouth Hospital NHS Trust**
	Nursing Students: BSc(hons) Child Health Nursing
Stage three	**Site two: Plymouth Hospital NHS Trust**
	Nursing Students: BSc(hons) Adult Nursing

1.3.3 Design: Phase three

Phase three provides the final Phase of the study in which the findings from the previous two Phases were synthesised using meta-analysis. Phase three utilised meta-ethnography to draw together secondary constructs in the form of sub-themes and key categories generated from Phases one and two. This led to the development of a conceptual model for PAL.

1.4 Overview of the thesis

Chapter 1: Introduction

Chapter 1 presents an introduction to the thesis, which includes the; background, rationale, aims of study, research question and design.

Chapter 2: Experiences of undergraduate nursing students in peer assisted learning in clinical practice: a qualitative systematic review (Phase one).

Chapter 2 presents Phase one of the study in the form of a systematic review of the literature entitled: 'Experiences of undergraduate nursing students in peer assisted learning in clinical practice: a qualitative systematic review.' This chapter includes a comprehensive systematic review based on a published review protocol in the Joanna Briggs Institute Database of Systematic Reviews and Implementation Reports (Appendix I). The qualitative systematic review as presented in this chapter is published in the Joanna Briggs Institute Database of Systematic Reviews and Implementation Reports.

Chapter 3: Methodology

Chapter 3 presents both the chosen methodology and methods for the study. This chapter includes the rationale for choice of approach and methods, brief overview of ethnography and its relationship to participant observations and setting.

Chapter 4: An exploration of peer-assisted learning in undergraduate nursing students in paediatric clinical settings: An ethnographic study (Phase two)

Chapter 4 presents the findings of a study, which utilised ethnographic non-participant observations to explore PAL among child health nursing within a clinical setting as part of stages one and two in Phase two.

This chapter is published in Nurse Education Today.

Chapter 5: Exploring PAL among nursing students in one NHS trust (Phase two)

This chapter will include a study reporting the findings of observations with student nurses from the field of adult nursing in site two. This was part of stage three in Phase two.

Chapter 6: Meta-ethnography and development of a PAL conceptual model (Phase three)

Chapter 6 presents a study, which used meta-ethnography as part of Phase three to synthesise and draw together the findings from Phase one and two to develop a conceptual model for peer-assisted learning.

This chapter is published in Nursing Open.

Chapter 7: Discussion, limitations and implications

Chapter seven presents a discussion related to the study with further consideration of conceptual model and how this relates to achieving the aims and objectives of the study. This section further considers the limitations of the research as well as implications for clinical practice, education and research.

Chapter 8: Conclusion and recommendations for future research

Chapter 8 presents the overall conclusion in line with how the research and its three phases aligns with the requirements for doctoral degree and recommendations for future research.

CHAPTER 2: EXPERIENCES OF UNDERGRADUATE NURSING STUDENTS IN PEER ASSISTED LEARNING IN CLINICAL PRACTICE: A QUALITATIVE SYSTEMATIC REVIEW (PHASE ONE)

In this chapter, Phase one of the study is presented, the aim of which was to complete an in-depth review of the current literature. A preliminary data search of peer-assisted learning found that, as a concept in nurse education, this was a fairly new and unstructured model, which offered a paucity of evidence pocketed over the last decade. It was decided that a systematic review would provide a rigorous approach to finding and assessing the quality of the evidence and synthesise existing studies to determine aggregated themes and potential gaps in the literature. The review, which has been published in the JBI Database of Systematic Reviews and Implementation Reports was conducted using the Joanna Briggs Institute Systematic Review methodology, following an *a priori* published protocol (Carey et al., 2016, Appendix I). An overview of the Joanna Briggs Institute, its associated methodology and justification for its use as the framework for the systematic review can be found in Appendix II).

The bibliographical details of the work, a description of the work, and an estimated percentage of contribution (%) of each author are as follows: Carey, M.C. (90%) Kent, B. (5%) Latour, J.M. (5%). The percentages of contributions have been agreed among all authors.

MCC generated the initial idea and wrote the study protocol. MCC performed the search and retrieval of relevant papers. Assessment of methodological quality was undertaken by MCC and BK. MCC performed the initial analysis and Interpretation of the themes through to the discussion and recommendations were conducted by MCC. MCC drafted the first manuscript. All authors have contributed and agreed the final manuscript.

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2.1. Abstract

Objectives

The objective of this qualitative systematic review was to identify and synthesize the best available evidence on experiences of peer assisted learning (PAL) among student nurses in clinical practice so as to understand the value of PAL for this population.

Introduction

Peer-assisted learning considers the benefits of peers working in collaboration and supporting each other in professional roles. This approach to facilitate learning is effective within universities, but there is limited exploration within the clinical practice environment. Within the UK, 50% of student nurses' learning is undertaken within clinical practice, providing a large portion of student allocation within these areas, but is unexplored in relation to PAL. Therefore, existing evidence examining PAL in clinical practice needs further exploration for a better understanding of its value to student nurses' learning.

Inclusion criteria

The systematic review considered studies that included male and female nursing students aged 18–50 years that explored undergraduate nursing students' experiences of PAL within the clinical practice environment. Studies that utilized designs such as phenomenology, grounded theory, ethnography, action research and feminist research were considered. Other text such as opinion papers and

reports were to be considered if no qualitative studies could be located. The review excluded quantitative studies, as well as those addressing PAL outside the nursing profession and students within the nursing profession but not including undergraduate student nurses. This review considered studies that included aspects related to experiences of PAL in the clinical practice setting, as seen by undergraduate nursing students and the researcher.

Methods

A three-step search strategy was undertaken to find both published and unpublished studies in English from 2003 to 2017 in various databases, and included searching of reference lists within articles selected for appraisal. Each of the included studies were assessed for methodological quality independently by two reviewers, using the Joanna Briggs Institute Critical Appraisal Form for Interpretive and Critical Research. Qualitative data was extracted using the standardized JBI qualitative data extraction tool. Qualitative research findings were synthesized using JBI methodology.

Results

From the eight included studies, 37 findings were extracted. These findings were further aggregated into seven categories, and then into three synthesized findings. These three synthesized findings are: 1) Challenges of clinical practice are mitigated by peer support; 2) Peers are role models for enhancing clinical knowledge; and 3) Support and feedback develop competence and confidence, and reduce stress and anxiety.

Conclusions

Peer-assisted learning exists in clinical practice in both formal and informal circumstances. Friendship and community are often expressed as occurring when peers work together. Support and feedback help students develop in their clinical role and enhance clinical knowledge. Outcomes include enhancing the competency and confidence of peers, and reducing stress and anxiety. Challenges of clinical practice are mitigated through PAL.

Keywords

clinical practice; education; PAL; peer-assisted learning; undergraduate nursing.

Summary of findings

Table 2: Systematic review summary of findings

The experiences of peer assisted learning (PAL) on the learning of undergraduate nursing students in clinical practice: A qualitative systematic review **Population: undergraduate student nurses** **Phenomena of interest: the experiences of PAL and teaching in the clinical environment** **Context: undergraduate nurses undertaking their placements in the acute clinical setting**					
Synthesised finding	**Type of research**	**Dependability**	**Credibility**	**ConQual score**	**Comments**
Challenges of clinical practice are mitigated by peer support.	**Qualitative**	**High**	**Down grade one level***	**Moderate**	***Downgraded one level due to mix of unequivocal (U) and credible (C) findings** **7U + 1C**
Peers are role models for enhancing clinical knowledge.	**Qualitative**	**High**	**Down grade one level***	**Moderate**	***Downgraded one level due to mix of unequivocal (U) and credible (C) findings** **10U + 2C**
Support and feedback develops competence and confidence and reduces stress and anxiety.	**Qualitative**	**High**	**Down grade one level***	**Moderate**	***Downgraded one level due to mix of unequivocal (U) and credible (C) findings** **16U + 1C**

2.2 Introduction

Peer-assisted learning (PAL) is an initiative in which peers work in collaboration and support each other as they develop skills and knowledge related to their professional role. Topping (2005) defines peer learning as the ‘‘acquisition of knowledge and skill through active helping and supporting among status equals or matched companions’’. A peer is one who presents at a similar level of development with another peer, with the sharing of learning and guidance between these persons

being more equitable (Topping, 2005). The support of peers to facilitate learning has been used by universities for many years (Topping, 2005, Gilmour et al., 2007). There are many areas of terminology that are often associated with PAL, which include ‘‘peer teaching’’ (Brannagan et al., 2013), ‘‘peer support’’(Aston and Molassiotis, 2003) and ‘‘peer mentoring’’ (Yates et al., 1997, Li et al., 2010). The variations between these terminology often relate to the consideration of informal and formal roles of peer learning whereby in formal examples such as peer teaching students are characterized by specific role taking (Topping, 2005). The consideration of mentoring is also one often associated with a set of specific roles performed. This is usually in an encouraging and supporting one-to-one relationship between a worker who has more knowledge and experience in a joint area of interest and a protégé (Tourigny and Pulich, 2005). This relationship or process is characterized by both shared learning and a commitment to developing each other’s professional growth, features noted within the area of PAL (Topping, 2005, Tourigny and Pulich, 2005). However, the role of peer relationships has also seen to exist in informal mentor roles identified through mutual identification and personal development needs but unstructured to formal programmes of mentorship (Kram and Isabella, 2000). The roles of these individuals are often not specific, but vary depending on the needs of both the mentor and protégé. However, important to note is that informal mentoring can be represented by either a hierarchical role such as superior learner to less experienced learner or peer (similar level of learning) (Tourigny and Pulich, 2005).

Studies evaluating PAL within nursing suggest that it contributes to enhancement in the competence of student learning and self-efficacy in clinical settings (Brannagan

et al., 2013, Goldsmith et al., 2006). Evidence also suggests that student nurses should be encouraged to become peer teachers (McKenna and French, 2011). Owen and Ward-Smith (2014) evaluated the interactions during simulated learning between third-year students playing the role of patients and mentors alongside first year students providing care and receiving guidance from senior students. This near-peer teaching approach provided a positive learning opportunity for all students and encouraged knowledge and skills attainment (Owen and Ward-Smith, 2014). Formal peer mentoring between second-year nursing student mentors and first-year mentees within the academic environment appear to show benefits, as these partnerships support the transition from university to nursing practice by preparing students to be mentored in clinical settings and reducing students' anxiety (Gilmour et al., 2007, Li et al., 2010, Giordana and Wedin, 2010). Thus, PAL in nursing seems to be beneficial to students' teaching and learning, although it has been argued that peers providing support lack the level of experience of professional teachers and educators (Topping, 2005).

The implementation of PAL among other health professional groups has been gathering momentum for the last few years (Furmedge et al., 2014). A literature review summarized the key concepts of PAL within the areas of peer teaching, training and peer assessment among medical students (Burgess et al., 2014). However, when exploring domains for learning within medical programs, it became clear that this mode of learning is rooted within Higher Education Institutes (HEI) rather than the clinical environment (Furmedge et al., 2014). Peer-assisted learning has also been explored within Occupational Therapist education, although the evidence base remains sparse. Such work identified that there are difficulties arising

in placement areas when PAL is being considered and these include that students are often placed singularly in clinical practice resulting in limited contact with peers in the field (Thomas and Storr, 2005). Further exploration of the literature identified some consideration of PAL within midwifery, albeit limited in nature. One study explored the perceived value of PAL from perspectives of undergraduate midwifery students and paramedic students and revealed that the approach served to provide respect and understanding of each other's roles (McLelland et al., 2013). The lack of evidence of the benefits of PAL in healthcare professionals' education might be due to the differences in education and practice experience between these quite diverse groups. Therefore, it is helpful to explore more fully the structure or format of undergraduate nursing education programs to capture why the uptake of PAL has been greater than for other professional groups.

Within the United Kingdom (UK), as in many other countries world-wide, nursing student learning is not limited to taking place within HEIs alone. The UK's Nursing and Midwifery Council standards for supporting learning in practice require that 50% of student learning must be undertaken within practice (NMC, 2009). The assessment of learning within these areas is undertaken primarily by registered nurse mentors, who are responsible for providing learning opportunities, feedback and assessment of competencies (NMC, 2009). However, the quality of mentorship is variable, and the level or type of support given can differ in many ways. For example, Andrews and Chilton (2000) found that not all mentors see themselves as teachers. Clinical workload can also limit opportunities for students to work together with their mentors (Lloyd-Jones et al., 2001, Hurley and Snowden, 2008). Such situations may leave students feeling nomadic in their placement areas, resulting in

students seeking out each other for further support (Roberts, 2008). Interestingly, as the intake sizes of students have grown, particularly in the UK, with corresponding rising demand for clinical placements, so too has the likelihood of nursing students being allocated to the same placement areas (Aston and Molassiotis, 2003). This scenario provides more opportunity for PAL to occur.

Most of the learning that takes place in practice between nursing students has been labelled as informal (Roberts, 2008). The recognition of potential gaps in time spent with qualified nursing mentors and the missed opportunities to learn alongside them have led to formal studies of peer learning in practice (Li et al., 2010). However, within these, there is a paucity of available evidence exploring the perceived value of PAL and the students' interactions and behaviors within acute clinical settings. Campbell et al. (1994) were among the first researchers to explore how student nurses learn together in clinical settings. Peer support emerged as one of the most influential factors of student learning. Specific areas in which this support was most beneficial encompassed the provision of emotional support, sharing of experience to facilitate learning and using peers to support with physical tasks (Campbell et al., 1994). It was a further 10 years before developments in the area of PAL began to produce specific research related to PAL within nursing.

When exploring the responsibilities of mentors (NMC, 2009), it is clear that there is a lack of clarity around the experiences of competence that may or may not exist between peers to facilitate learning. Competence has been difficult to define in nursing (Bradshaw, 1997, Maylor, 2012); however, Roach (2015) defines it as ‘‘the state of having the knowledge, judgement, skills, energy, experience and motivation

required to respond adequately to the demands of one's professional responsibilities.''[p.3] This should not be confused with the process of assessing specific competencies of student nurses in practice (Gallagher et al., 2012). Chojecki et al. (2010) found that the types of competencies that are developed by student nurses in clinical practice are knowledge, critical thinking, professionalism and psychomotor and technical skills. Prion et al. (2015) explored competencies of preceptees' (i.e. those new to either the profession or an organization) in three areas; knowledge, practical skills and attitudes. Each of these are needed as part of the students' professional growth and so if these competencies are not reflected through PAL, then the experiences as well as influence of attitudes and behaviors of peers needs to be explored further.

Peer-assisted learning is gathering momentum in terms of its formal recognition within the UK and internationally (Giordana and Wedin, 2010), however, for nursing education, the experiences of how PAL contributes towards students' learning in practice require clarification in order to fully inform the rationale for the growth in this approach to learning. With this in mind, a preliminary search of the literature identified numerous qualitative studies, and a few quantitative studies, that focused on PAL (and its associated approaches) within nursing. A previous qualitative systematic review (Stone et al., 2013) was located that explored the value of peer-learning in undergraduate nursing education, but this did not explore the experiences of PAL on nursing students' learning in the clinical environment. No other reviews were located. Therefore, in order to address this gap in the evidence base, the systematic review reported here was undertaken to synthesize the literature and

aggregate key themes that have emerged in relation to experiences of PAL among student nurses in clinical settings.

This review was conducted according to an *a priori* published protocol (Carey et al., 2016).

2.3 Objectives of the review

The objective of this qualitative systematic review was to identify and synthesize the best available evidence related to experiences of peer teaching and learning among student nurses in the clinical environment.

More specifically, the objectives were to:

- Identify nursing students' experiences of PAL and teaching within the clinical setting.
- Identify qualitative data that highlight the strengths and weaknesses of PAL among student nurses in the clinical settings.
- Explore whether experiences of PAL enhance the perceived competence of student nurses' learning in clinical settings.

2.4 Inclusion criteria

Types of participants

This qualitative review considered studies that included both male and female participants enrolled on an undergraduate nursing programme, across all years and

groups of study and the associated terminology of undergraduate, junior or freshman/fresher, sophomore and senior nursing students. The age of participants was those over 18 years to enable the inclusion of a range of adult learners. This qualitative review also included participants across all associated fields of nursing including, child health/pediatric, adult/general, mental health and learning disability.

Phenomena of interest

This review considered studies that evaluated undergraduate nursing students' experiences of PAL within the clinical practice environment. This included opportunities for learning and interaction linked to associated terminology including; 'peer tutoring', 'peer mentoring' and 'peer support'. Studies that give reference to and consideration towards student nurse peers working alongside each other in the clinical practice setting were also considered.

Context

This review considered studies that included aspects related to experiences of peer-assisted learning in the clinical practice setting, as seen by undergraduate nursing students and the researcher.

Types of studies

This review considered studies that focused on qualitative data including, designs such as phenomenology, grounded theory, ethnography, action research and feminist research.

In the protocol, it was stated that if such research studies were not found then other

text such as opinion papers and reports were to be considered, however this was not necessary. The current review excluded quantitative studies, as well as those studies addressing PAL outside of the nursing profession and those that involved students within the nursing profession but did not include undergraduate student nurses.

2.5 Methods

Search strategy

The search strategy aimed to find both published and unpublished studies. A three-step search strategy was utilized in this review. Following an initial limited search of the COCHRANE Central Trials Register, ERIC, MEDLINE and CINAHL, analysis of the text words contained in the title and abstract, and of the index terms used to describe the article was undertaken. The search for unpublished studies included ProQuest Thesis and Dissertations. The COCHRANE Central Trials Register was explored only for completeness, to identify any possible qualitative components of quantitative studies included in systematic reviews on PAL. A second search using all identified keywords and index terms was undertaken across all included databases.

The databases searched were:

ERIC, via EBSCOhost

MEDLINE, via EBSCOhost

CINAHL, via EBSCOhost

COCHRANE Central Trials Register

ProQuest Theses and Dissertations

Thirdly, the reference lists of all identified reports and articles were searched for additional studies. Only those studies published in English were considered for inclusion in this review and there were limits imposed to restrict the dates of the search; only studies published in the last 13 years between 2003 -2017 were considered for inclusion in this review. Although the presence of PAL had been explored by Topping (2005), who studied the evidence from 1981 to 2006; because of its application to clinical education programmes, including nursing (Secomb, 2008), it was not until 2003 that the need to explore peer support is formally considered and acknowledged (Aston and Molassiotis, 2003). At this time practices related to the supervision and supporting of student nurses by peer mentors, in clinical settings were becoming more prevalent. Details of the search strategy process are located in Appendix II.

Assessment of methodological quality

Qualitative papers selected for retrieval were assessed by two independent reviewers for methodological validity prior to inclusion in the review using Joanna Briggs Institute (JBI) Critical Appraisal Checklist for Qualitative Research from JBI System for the Unified Management, Assessment and Review of Information (JBI SUMARI, Lockwood et al., 2015). Any disagreements that arose between the reviewers were resolved through discussion and so a third reviewer was not needed.

Data extraction

Qualitative data were extracted from papers included in the review using the standardized JBI qualitative data extraction tool from JBI SUMARI (Lockwood et al., 2017). The data extracted included specific details about the populations, study methods and findings significant to the review question and the phenomena of interest.

Data synthesis

Qualitative research findings were pooled using JBI SUMARI. This involved the assembly of the findings rated according to their quality, which were then categorized on the basis of similarity in meaning. These categories were then subjected to an aggregated meta-synthesis to produce a comprehensive set of synthesized findings.

2.6 Results

Study inclusion

As shown in the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) flow diagram in Figure 2, 567 articles were identified from a detailed systematic search process across a number of selected databases. Five articles were identified through other sources. These articles were imported from databases into End-Note bibliographic software whereby 50 duplicates were removed. After removal of duplicates, a total of 522 titles and abstracts were

screened for eligibility and 509 records not relevant to the topic were excluded. The remaining 13 potentially relevant articles were subject to further detailed assessment of eligibility by review of the full text. Five full-text articles were removed as they did not meet the protocol criteria (see Appendix III). The remaining eight studies were included within the qualitative appraisal.

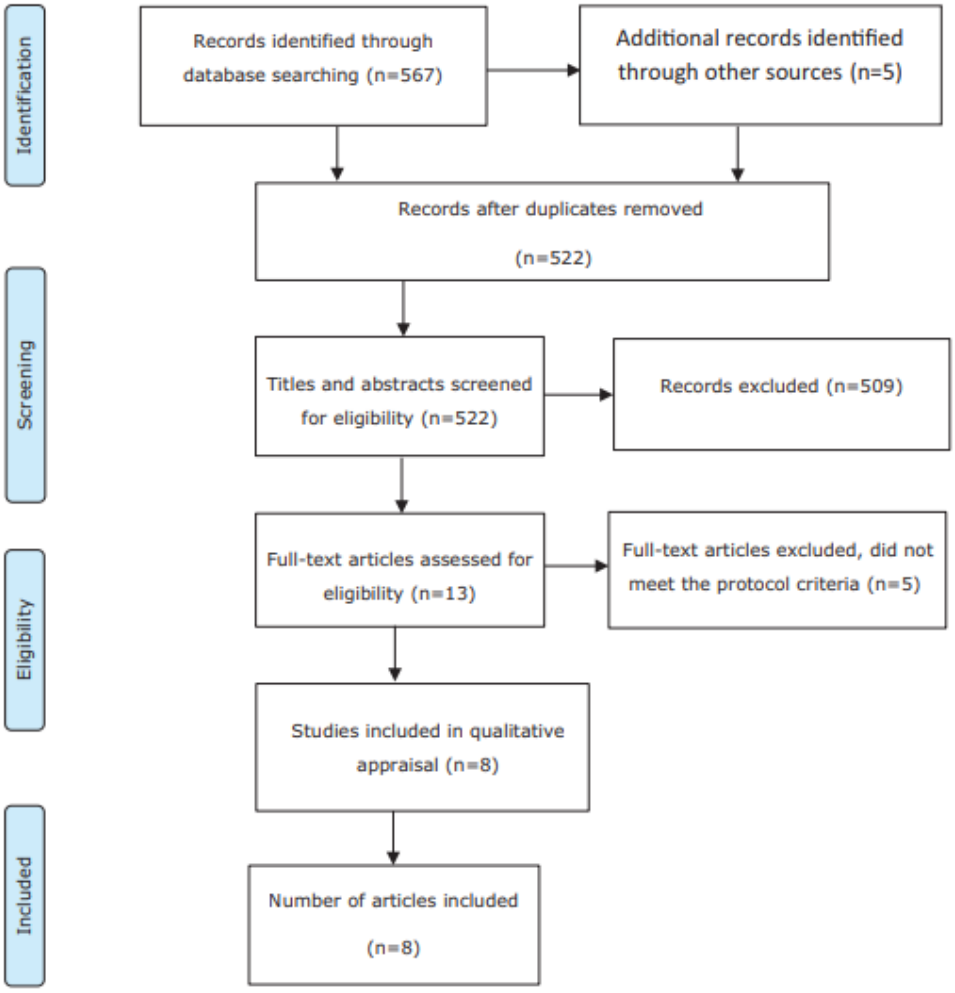

Figure 2: PRISMA flow diagram of study selection and inclusion process

PAL (Peer-Assisted Learning)

Methodological quality

From the assessment of methodological quality, criteria 1,3,4,5 all of which relate to the philosophical perspective, congruity between research methodology and methods as well as representation of analysis and interpretation of these results, were met by all included studies (see Table 3). Congruity between the research methodology and the research question in criteria 2 was clear in all, but four of the included articles. In criteria 6, a statement locating the researcher culturally or theoretically was not included in any of the articles. The influence of the researcher on the research, within criteria 7, had only been addressed in one of the articles. Additionally the assessment of criteria 8, which relates to the representation of the participants' voices, was addressed in all but one of the included studies. Consideration of ethics and clear indication of ethical approval and process outlined in criteria 9 was clear in all but two studies. Finally, within criteria 10 all but one of the included articles demonstrated clear examples of conclusions that flow from the analysis and the interpretation of the data.

Table 3: Assessment of methodological quality

Citation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Ravanipour, M., Bahreini, M., Ravanapour, M., 2015	Y	Y	Y	Y	Y	N	N	Y	Y	Y
Austria, M.J, Baraki, K., Doig, A.K., 2013	Y	U	Y	Y	Y	N	N	Y	Y	Y
Harmer, B.M., Huffman, J., Johnson, B., 2011	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
Giordana, S., Wedin, B., 2010	Y	U	Y	Y	Y	N	U	Y	N	Y
Christiansen, A., Bell, A., 2010	Y	U	Y	Y	Y	N	N	N	Y	Y
Roberts, D., 2009	Y	Y	Y	Y	Y	N	N	Y	Y	Y
Roberts, D., 2008	Y	Y	Y	Y	Y	N	N	Y	Y	Y
Sprengel, A.D., Job, L., 2004	Y	U	Y	Y	Y	N	N	Y	N	U

Characteristics of included studies

The studies included within the review were published during the period of 2004-2015. The participants that were included within the studies included undergraduate student nurses from all levels and stages of study, including sophomore student nurses. The studies included both male and female students aged between 18-50 years of age.

The setting for the included studies was acute healthcare settings:

Four of the studies were set within a single hospital with one clinical area
Two studies were in a single hospital with multiple wards
One of the studies was set within multiple hospitals within multiple wards
One study did not report the specific clinical practice setting

Of the eight included studies, three different countries were represented within the review: USA, UK and Iran.

A range of qualitative methodologies were represented in the studies: Content analysis, phenomenology, mixed methods survey, social constructionism and ethnography.

The stated phenomena of interest within the eight articles included within the review were broadly categorised into two phenomena. The first was studies that were concerned with undergraduate student's nurses' experiences of PAL within the

clinical practice setting. The second category of phenomena was related to undergraduate nursing students' experiences of peer mentoring. The phenomena of interested was reasonably homogenous across all studies as they concerned themselves with undergraduate student nurse experiences of peer learning. From the eight included studies, six identified formal circumstances, in which undergraduate nursing students were purposively paired with other student nurses in mentor roles. The remaining two studies explored interactions outside of formal circumstances.

The characteristics of included studies are summarized in Appendix IV

2.7 Review findings

From the eight included studies, 37 findings were extracted through JBI SUMARI (Appendix V). For each of these 37 findings, a level of credibility was assigned from the following choices to indicate the level of support: Unequivocal [U], Credible [C] and Unsupported [US] (Appendix VI). Of these, 33 were considered to be 'Unequivocal' evidence, with the remaining four assigned as being 'Credible' evidence. All findings were synthesized and assigned to seven categories based upon their similarity in relevance. One of the findings was not included within a category as it did not align to any of them. These seven categories were then further combined through meta-aggregation into three synthesized findings. The extracted findings for each study are shown in Appendix V.

The three synthesized findings were: ‘‘Challenges of clinical practice are mitigated by peer support.’’, ‘‘Peers are role models for enhancing clinical knowledge’’ and ‘‘Support and feedback develops competence and confidence and reduces stress and anxiety.’’ A full overview of the findings linked to categories and synthesized findings can be seen in Appendix VII. Each of the synthesized findings is reported more fully below:

Synthesized finding 1: Challenges of clinical practice are mitigated by peer support

This synthesized finding was generated from the aggregation of two categories, underpinned by eight extracted findings. Overall, students reported feelings of being isolated when first coming into the clinical practice environment, and they struggled to find a balance when working solo as they were often pulled in various directions by other clinical staff. Nursing students appear to find solace and support by forming their own communities and friendships with other student nurses when in clinical practice.

The first category ‘Navigating the course in clinical practice’, is developed from two extracted findings: ‘Gaining acceptance’ and ‘The challenges of initial practice experience’, which capture how students struggle to find the balance in their role and feel isolated when working alone in a new clinical practice experience.

The second category ‘Connecting with peers to create bonding and mutual support’, is developed from a total of six findings: ‘Birds of a feather flock together: students converge together, particularly when they find themselves alone or when their

mentors are busy elsewhere', 'Friendship and learning in clinical practice', 'Learning with peers', 'Socialization practice', 'The students develop an 'ask anything' culture where they see each other as valuable sources of information' and 'The students see each other as a discrete group which only fellow students can understand and so develop their own parallel community to help each other: 'being in the same boat'. These findings reflect how peers naturally form the friendships needed and practice socialization to use each other as resources. Through these actions, they develop their own specific communities.

Synthesized finding 2: Peers are role models for enhancing clinical knowledge

This synthesized finding was aggregated from two categories, derived from 12 extracted findings. This summarizes that peers use each other as role models for modeling and enhancing their knowledge of care, although there is some indication of difficulty in defining each other's role when working together.

The first category 'Enhancing knowledge of care', is derived from nine extracted findings: 'Affective modeling of care', 'Curricular staging for novices', 'Hands on modeling of care for mentors', 'Improved understanding of the clinical educator role', 'Knowledge is not necessarily linked to seniority', 'Mentees perceive an active role modeling of care', 'Peer learning provides first learning efficacy', 'Improving clinical judgment', 'Time management and prioritization of care'. Together these findings reflect how peers work together to develop their clinical knowledge and skills, as well as their judgement to model effective care.

The second category 'Complex choices when sharing learning opportunities' is derived from three extracted findings: 'Challenges of student role in dyad', 'Difficulty

in negotiation of task', 'Peer exploitation'. These findings capture some of the challenges experienced by peers when working together, which are largely centered on undefined roles when engaging in PAL.

Synthesized finding 3: Support and feedback develops competence and confidence and reduces stress and anxiety

This synthesized finding was aggregated from three categories, formed from 17 findings. Student nurses, who work alongside each other as peers in clinical practice, use each other for support and feedback to enable them to develop their competence and confidence, as well as to reduce feelings of stress and anxiety.

The first category: 'Support and reassuring learning from mentors', is derived from four findings 'Clinical instructor had a role to play in student learning', 'Mentees received reassurance from senior mentors', **'**Patient role in student learning' and 'Personal growth and development'. These findings, together with their extracted data, capture how students gain support and reassurance from their peers and those acting as mentors.

The second category 'Increasing confidence/reducing anxiety and stress', is developed from a total of seven extracted findings: 'Decreased anxiety and increased confidence', 'Paradoxical dualism', 'Improved self-confidence', 'Improved self-confidence', 'Positive support from peers', 'Reduced anxiety' and 'The teaching role provided a positive change'. These findings reflect how peer learning and support have perceived positive benefits in decreasing stress and anxiety and improving self-confidence.

The third category ‘Complimentary learning aids clinical skill development’, was derived from six findings: ‘Developing clinical skills’, ‘Increased efficiency with tasks’, ‘Overwhelming the patient’, ‘Survival skills’, ‘Teaching how to care’ and ‘Team working and collaboration’. These findings summarize the impact of PAL on clinical skills development. It highlights the main benefits from positive support provided by peers.

2.8 Discussion

The purpose of this qualitative systematic review was to explore the experiences of PAL undertaken to enhance the learning of undergraduate student nurses in clinical practice. The focus of this review took into consideration both formal and informal circumstances of PAL and its associated terminology. Studies that were included for analysis contained a mixture of formal and informal examples of PAL. Formal circumstances were identified in six of the included studies, in which undergraduate nursing students were purposively paired with other student nurses in mentor roles (Giodana and Wedin, 2010, Ravanipour et al., 2015, Austria et al., 2013, Harmer et al., 2011, Christiansen and Bell, 2010, Sprengel and Job, 2004). However, two of the studies explored peer learning outside of these formal structures, whereby undergraduate nursing students found themselves in contact with other peers when allocated to the same clinical practice placement areas, but not in a mentorship capacity (Roberts, 2008, 2009). Such occasions arose by chance, rather than formal process. In reports from one study, students expressed their experiences of working

solo and described feelings related to anxiety and isolation, especially when coming into a new clinical placement:

> *"It was crazy, it was really busy but just coming into the hospital alone, it's massive… loads of people… I felt lost at first and had knots in my stomach."* *(Christiansen and Bell, 2010, p806)*

Formal roles of senior to junior peers were evident from the included studies that explored formal parings, however, the review found that learning is not only linked to seniority:

> *"Where you are in your training holds no significance since you are often able to offer guidance to a student who is further on than yourself, just as much as you can gain from someone who is less experienced. It depends more on the individual experiences you have as a student and not on the amount of time you've been training."* *(Roberts, 2009, p370)*

For most students, bonds and friendships formed naturally through their role as student nurses:

> *"I have found the company of fellow students while on clinical placement to be very reassuring. A new placement, whether it is my first or last, is always daunting. Students tend to stick together and swap experiences and anecdotes."* *(Roberts, 2008, p37)*

This led to the development of peer communities within clinical areas. From the development of these communities, students were able to connect with their peers to create bonding and to find both mutual support and guidance, findings that emerged across multiple studies (Roberts, 2008, 2009, Ravanipour et al., 2015, Christiansen and Bell, 2010). Furthermore, it has been noted how the formation of friendships and communities has been valuable for social gain, through more formal pairings of peer

learners in the academic environment. Loke and Chow (2007), in their study pairing of senior to junior student nurses, reported experiences of positive benefits in socialization with other students. Both student groups appreciated the chance to expand their circle of friends and experienced value in the friendships that developed through these parings.

One area where students were able to develop their practical learning was in the enhancement of their clinical skills. Examples included practical skills, such as manual handling (Austria et al., 2013) and vital sign monitoring:

> *"She asked about the BP/TPR [blood pressure/temperature, pulse and respiration] chart which I subsequently described and introduced her to. I found this really useful because it made me re-examine how I had been introduced to the chart on the ward and the way in which it had been explained to me. Describing to another student the basics of blood pressure and pulse, and also the importance of respiratory obs [observations] made me more aware of how important it is to get a sound initial grasp of a subject before feeling able to embark on attempting to understand it further."* *(Roberts, 2008, p40)*

There were also examples of developing competence in the areas of task efficiency (Austria et al., 2013) and team working (Harmer et al., 2011). Beyond practical skills, students were able, through PAL, to develop their competence in aspects of time management and prioritization of care, to enhance their overall knowledge of care:

> *"Having to explain why I was doing what I was doing helped me to realize to prioritise better."* *(Harmer et al., 2011, p201)*

Students reported how their development of clinical knowledge arose as a result of role modeling of care from those peers who acted as mentors to other students (Giodana and Wedin, 2010, Harmer et al., 2011, Austria et al., 2013). Similar

benefits were found in one study between peer support and learning offered during clinical skills practice (Rush et al., 2012). Within the clinical skills laboratory, small peer groups of students reported experiences of enhancement of clinical skills proficiency through the learning obtained from other peers.

The experiences of students through PAL were reflected in the perceived increased confidence that emerged across multiple studies:

> *"I was nervous to have someone follow me around at first. But I ended up feeling more confident knowing that I have someone experienced by my side."* *(Harmer et al., 2011, p.201)*

The review findings capture the origins of this confidence, which came from the mutual understanding, amongst peers, of knowing what it was like to be a student nurse in the clinical practice environment (Giodana and Wedin, 2010, Austria et al., 2013, Ravanipour et al., 2015). However, it was also clear that senior students were able to reflect on their own development through supporting other peers, and thus increase their own confidence (Giodana and Wedin, 2010, Sprengel and Job, 2004). Alongside the increase in confidence arising from PAL, students also appeared to reduce their feelings of stress and anxiety:

> *"I kind of liked working in pairs. It kind of helped me not be so scared and helped build my confidence. It's easier to ask a student for help sometimes than an instructor just because they are on the same level as you."* *(Austria et al., 2013, p4)*

After some initial fears of being paired with peers, students soon expressed positive feelings from the support provided by another peer working alongside them (Sprengel and Job, 2004, Harmer et al., 2011, Austria et al., 2013, Ravanipour et al.,

2015). This example of increased confidence was also captured by Goldsmith et al. (2006), who evaluated peer learning partnerships between senior and junior peers in clinical skills settings. The authors noted an increase in student confidence who valued these experiences. Multiple studies also make references to increased confidence and reduced anxiety through the benefits and experiences of PAL in both academic and clinical skills environments (Broscious and Saunders, 2001, Daley et al., 2008, Rush et al., 2012). Interestingly, one quantitative study that used questionnaires to capture student nurse experiences of informal peer group learning, reported feelings of increased anxiety. However, the study does not capture or report on the rationale for these anxieties (Hughes et al., 2003).

This review identified examples of two-way partnerships among the peer groups. Many of the students who acted as peer mentors in formal roles were able to develop their learning, particularly in the area of providing reassuring guidance and support to other peers:

> *"I felt like I wasn't going to do anything detrimental because if I was about to do something completely wrong someone was there to say, 'Whoa. Don't do that."* *(Giodana and Wedin, 2010, p395)*

Junior peer mentees were also able to provide positive feedback to senior peer mentors to encourage recognition of their personal growth and development:

> *"I felt good when a first year came up to me and said 'thanks I've really learned a lot today, you really did well'… it felt great to get that kind of recognition."* *(Christiansen and Bell, 2010, p808)*

One outcome, as expressed by one of the junior peers, related to how PAL helped to

develop their experience and prepare them for solo working in the future (Austria et al., 2013). Furthermore, peers viewed each other as role models for care provision or delivery; further examples of two-way learning partnerships (Giodana and Wedin, 2010). The enhancement and positive recognition of learning and personal growth is something that has also been captured in learning partnerships between nursing students within the academic environment (Loke and Chow, 2007). Loke and Chow (2007) evaluated formal sessions between senior and junior peers, and noted that student experiences reported how support from others helped enhanced their personal growth and development. This was also perceived by students to be beneficial to help them in their future working lives. Goldsmith et al. (2006) captured the same positive response arising from student experiences of perceived opportunities for personal growth through peer learning partnerships in clinical skills settings. Furthermore, positive experiences, linked to giving and receiving feedback and constructive criticism, had also been captured between groups of peers from the same year group in clinical skills settings (Rush et al., 2012).

Student nurse peers, especially those in a senior peer mentor capacity, recognized and expressed a new appreciation for the clinical educator role (Harmer et al., 2011, Austria et al., 2013). However, it is also important to note some of the challenges that were expressed by undergraduate nursing student peers. These arose occasionally in the area of accurately defining the roles of peers within the same pairs (Austria et al., 2013, Ravanipour et al., 2015). This was evident in aspects of clinical task allocation (Austria et al., 2013, Ravanipour et al., 2015). In these instances, it was noted by one peer that their partner was keen to take on the lion share of the clinical activity:

> *"The peer's role should be more supervisory than duty performance. One of the problems of my peer was that instead of giving me a chance to do the work, he tried to do all the activities by himself."* *(Ravanipour et al., 2015, p5)*

However, it reflected how it was difficult to negotiate the task as each peer wanted the experience largely for themselves and not to enter into the role of spectator:

> *"I felt, for instance, one of our patients needed their Foley removed and you have to choose who's going to do it because you both can't do it. So that was kind of hard because it was like you knew you would really get the full experience of getting to try everything. You had to decide who was going to get to do it (…) I like to do things. I would rather get the opportunity to do everything for that patient rather than sit and watch somebody else do it."* *(Austria et al., 2013, p5)*

Some students also reported missed learning opportunities, due to the personality of their peers who tended to dominate the learning opportunities rather than share out the experiences with their counterparts:

> *"Since you're probably doing half of everything, [you] kind of miss out on some of the learning because you're not doing everything first hand. If there's a more dominant personality in the pair then that person tends to do more of the talking and take more of the initiative than the other person… But if you tend to let the other person take control then I think it could detract from your personal learning because you don't do it first hand and so you don't realize that you are not learning. Sometimes I'll be watching something and I'll think like, "Oh yeah, I'm getting this" and then when you go to do it on your own it's totally different."* *(Austria et al., 2013, p6)*

Interestingly, it was noted within the findings, that these challenges faced arose from some of the studies that implemented formal parings of peers (Harmer et al., 2011, Austria et al., 2013). However, despite the evidence of these challenges, it was still clear that they were surpassed by the benefits that peer-assisted learning had to offer as an overall concept. Further examples of mismatch in personalities were

noted in a study that considered the learning partnerships between junior and senior peer pairings to support nursing activities within the academic environment. Both groups of students experienced missed opportunities of learning due to lack of preparation, direction, differences in personalities and mismatched styles of learning (Loke and Chow, 2007).

A limitation of this review that must be acknowledged is that all but one of the included studies were conducted in the western world (USA and UK). Therefore it is important to note that the terminology linked to and associated with PAL may differ and have different connotations in other parts of the world. Further review of the outlying study revealed that PAL was defined very similarly to that of the western interpretation (Topping, 2005) in that it was described as a two-way reciprocal learning process amongst an equal to include the sharing of knowledge, ideas and experiences to benefit groups of both peer and student (Ravanipour et al., 2015). Despite this, the wider application of these findings should still be considered as being limited to western society and, therefore, further research may be required.

2.9 Conclusion

Overall, it is clear that this systematic review indicates that there is experiential evidence supporting the belief that getting involved with PAL in clinical settings is beneficial for student nurses. Peer-assisted learning amongst undergraduate nursing students exists in clinical practice in both formal and informal circumstances. Furthermore, students experience friendship and develop a sense of community from working together as peers, and that these benefits are cemented by the shared

understanding of what it is like to be a student nurse on placement within the clinical environment. Peers are perceived to provide and be provided with adequate support and feedback to help other nursing students develop as effective practitioners in the clinical setting. The evidence indicates examples of shared experiences of how they used each other as role models to enhance the development of their clinical knowledge and skills. This was seen in particular in the area of clinical skills teaching. Further, these shared experiences demonstrate that PAL is valuable in enhancing the perceived competency and confidence of peers and thus reduces associated stress and anxiety. Many of the challenges of being a learner in clinical practice are mitigated through PAL; however, some issues have emerged from the evidence, in relation to students who experienced examples of dominating personalities, as well as the lack of clarity related to role allocation within the formal mentor-mentee dyad. These notwithstanding, it is clear that the perceived benefits outweigh the perceived challenges and thus go a long way to support PAL as a useful concept in clinical practice.

2.10 Recommendations for practice

- Healthcare organizations need to be made aware of the role that PAL has in enhancing the experiences of undergraduate student nurses in the clinical environment.
- Healthcare organizations should consider how they can develop clinical practice areas to become effective and nurturing environments for

undergraduate student nurses to work together with their peers within both the formal and informal clinical context.

2.11 Recommendations for research

Drawing from the synthesized findings of the systematic review, recommendations for research arise that consider further the experiences of peer-assisted learning on enhancing the learning of undergraduate nursing students in clinical practice:

- In light of the paucity of evidence related to participant observation, further ethnographic research that captures the experiences of informal learning amongst peers in clinical practice is warranted and would add to the current body of literature.
- Further longitudinal research that explores the experiences of PAL across multiple clinical areas would inform the existing evidence base.
- Further research is needed to determine whether engaging in formal and informal peer mentor partnerships in PAL have different effects on the experiences and outcomes of undergraduate nursing students.
- Further research is needed to consider the implications of personalities on the experiences and outcomes of student nurses engaging in PAL.
- Further research is needed that consider the patients experiences when being cared for by students engaging in PAL.

2.12 Acknowledgements

This review formed part of a PhD being studied at the University of Plymouth, England, United Kingdom.

CHAPTER 3: METHODOLOGY

This chapter focuses on the methodology related to Phases two and three of the research, building on the learnings from the systematic review presented in Chapter 2. It will start by discussing the underlying theoretical framework.

3.1 Theoretical framework

The aim of the PhD research was to explore the influence of PAL on enhancing the learning of undergraduate nursing students in clinical practice.

The objectives were:

1. To explore the extent of learning development across different year groups of students when engaging in PAL.
2. To identify if PAL provides opportunities for optimising education in clinical practice.
3. To identify the types of interactions that occur as part of PAL in the clinical setting.
4. To synthesise the available evidence to develop a conceptual model for PAL.

The choice of methodology for a research study is largely influenced by the research question and an appropriate design must be selected in order to achieve the research aims and objectives (Parahoo, 2014). Quantitative methods focus on

collecting statistical and numerical data and simplifying it across the chosen groups to explain phenomena. Whereby qualitative methods focus more on in-depth exploration of aspects such as experience, belief and motivation to gain a better understanding of the phenomena (Kumar, 2014). However, more preceding to this is the importance to consider how this fit with the research paradigms and how these align with the more focused framework and choice for appropriate methodology to fit the aims and objectives of the study.

Guba and Lincoln (1994), in their consideration of the qualitative/quantitative distinction, explore paradigms as the basic belief systems routed on the ontological, epistemological and methodological assumptions, or the three major dimensions of the research process (TerreBlanche et al., 2007). They describe the paradigm as a set of basic beliefs, representing a worldview that defines for the philosopher the nature of the 'world' (Guba and Lincoln, 1994). Rossman and Rallis (2016) in their consideration of paradigms presented this as a shared understanding of reality. The point of reality is focused firstly within the consideration of ontology, the nature of existence to provide a specialisation of conception (Gruber, 1995).

Ontology and epistemology

Ontology concerns the question of what is reality? Regarding itself with 'what is' and encouraging researchers to take a position on what they consider their perceptions of how things 'are' and how they work (Scotland, 2012). Epistemology asks the question how can I know reality? Concerning itself with how knowledge can be created or what it means to know (Guba and Lincoln, 1994). Scotland (2012) states

that every research paradigm aligns itself with different ontological and epistemological assumption, but argues that these assumptions are conjecture and therefore philosophical underpinnings of paradigms can never empirically be proven or disproven.

Considering the breakdown of the aims and objectives within the thesis, thought was given to the ontological assumption and subsequent dimensions of the research process. Relativism as described by Guba and Lincoln (1994) is an assumption within ontology, which considers the view that there is no one true reality; rather, it is subjective and differs from person to person. Thus reality is created by individuals and groups (Crotty, 1998), who argues further that reality is facilitated by our senses and that without consciousness the world is meaningless (Crotty, 1998). The other aspect of reality within ontology is realism, which is based on the belief that there is only one reality, and is therefore objective (Guba and Lincoln, 1994).

Theoretical perspective

Within the assumption of relativism exists a set of research paradigms, which offers theoretical perspectives to ask the question what approaches do we use in order to know something? (Crotty, 1998). Mackenzie and Knipe (2006) define the broad classification of theoretical paradigms within examples such as positivist, constructivist, interpretivist, pragmatism, subjectivism and critical. Positivism is largely aligned with quantitative research in which purists believe that social observations are to be treated whereby the observer is separate from the subject and therefore objective (Maxwell and Delaney, 2004). Positivism, therefore, fits

within the realist view of ontological assumptions. Qualitative purists reject positivism and instead pioneer the superiority of constructivism, idealism, interpretivism and importantly relativism (Burke-Johnson and Onwuegbuzie, 2004). These purists contend that multiple realities abound and that the research needs to be value bound. Importantly the knower and the known cannot be separated, as the subjective knower is the main source of reality and therefore needs to immerse themselves rather than to be objective (Guba, 1990). Qualitative purists are also characterised by their preference of detailed, rich and thick description, which is often written directly and informally, rejecting a detached and passive approach (Burke-Johnson and Onwuegbuzie, 2004). The model of peer learning derives itself from theories of social learning and social constructivism, and considers that the learning itself involves social cognition that leads to knowledge and understanding between two individuals (Mamhidir et al., 2014). A qualitative paradigm is often used in social science to create the rich data needed in alignment with the aims and objectives of the study (Creswell, 2013).

Interpretivism

The paradigm of interpretivism, which concerns itself with understanding the world, requires that reality needs to be interpreted as it is seen by the subjective experiences of individuals (Creswell, 2003, Yanow and Schwartz-Shea, 2011). The aim of the study was to explore the influence of PAL on enhancing the learning of undergraduate nursing students in clinical practice. Furthermore the objectives sought to explore the extent of learning when students engage in PAL, whether PAL provides opportunities for optimising education and to identify types of interaction

that occur as part of PAL. Therefore, these link between the research paradigm of interpretivist and a qualitative approach, as the focus on social groups and cultures seemed appropriate, especially when exploring interactions of student nurses to gain a better undertaking of how participants think and behave (Willis, 2007).

Approaches to qualitative research

Creswell compared qualitative research to intricate fabric, which is composed of threads, colours, textures and different materials woven together and, like the loom on which fabric is woven, presents the frameworks that holds it all together (Creswell, 2013). It is within these frameworks that consideration is given to paradigms such as interpretivism and constructivism, but moving forward consideration needs to be given towards the associated approaches to qualitative research (Creswell, 2013). The approaches towards qualitative research are the methodologies that sit within the theoretical perspectives, such as interpretivism and can consider the procedure used to acquire knowledge (Crotty, 1998). Creswell (2013) considered qualitative approaches to be devised into five main options; narrative research, phenomenology, grounded theory, ethnography and case studies. However, some researchers argue that certain approaches have better alignment with an interpretivist paradigm (Thanh and Thanh, 2015) such as, ethnography and case studies (Willis, 2007), but may also include grounded theory (Corbin and Strauss, 2008) and phenomenology (Todress and Holloway, 2015). These approaches to qualitative research are largely associated with the fields of social sciences (Denzin and Lincoln, 2018) and nursing (Strauss and Corbin, 1990, Morse, 1994). Some may be considered in relation to their popularity and frequency,

but it is important to consider the approaches that offer a systematic procedure of rigorous data collection and analysis in answering the research question and meeting the objectives of the study (Creswell, 2013, Ahmed et al., 2016).

Ethnography

Ethnography is the chosen methodological approach for answering the research question and the aims and objectives of the study. This approach sits clearly within the paradigm of interpretivism. Ethnography is a very early form of qualitative research and traditionally was used within anthropology (Agar, 1980). Anthropologists, such as Malinowski, considered one of the founders of ethnography, used this method of research to immerse themselves within primitive cultures to live with and study their way of life (Creswell, 2013). The main characteristics of ethnography at this time was the use of participant observations to use a holistic approach to study certain communities and portray this from the perspective of the participant (Shultz, 1996).

The two key features that are expressed within the area of ethnography are culture and context (Shultz, 1996, Taylor, 2002). Hammersley and Atkinson (2007) suggest that the aim of exploring culture is to understand the people that are being studied and that their activities need to be observed within the context of the natural setting. In order to achieve this the researcher is encouraged to enter the environment of the participant to watch, listen and collect data where it is available (LoBiondo-Wood and Haber, 2014). Fetterman (2009) puts large emphasis upon culture and with this, the focus on behaviour as the key drive of the ethnographic researcher stating that

culture is the ‘sum of a social group’s observable patterns of behaviour, customs and way of life’ (pg. 17). However, it has been suggested that ethnography is used more loosely in other fields, such as social science and education (Shultz, 1996). Definitions within these fields acknowledge the importance of participant observation, however, in depth-interviews with participants have also been allocated (Morse, 1994), which was fitting with answering the research question and meeting the aims and objectives of the project.

Ethnography vs grounded theory

In consideration of the research question and the aims and objectives of the study ethnography was chosen as the main methodological approach, although grounded theory was also considered. Ethnography and grounded theory are similar in that both methodologies adopt more than one approach towards data collection to enable the researcher to interpret the research in multiple way and as a result enhance the credibility and accuracy of the study (Maggs-Rapport, 2000). Furthermore, the two approaches encourage the research to study the topic or phenomenon in its natural context using a holistic approach to achieve this (Calvin, 2004). This therefore provided similar opportunities to the primary investigator when choosing data collection methods in exploring the influence of PAL among undergraduate nursing students in the clinical setting.

One of the main differences between the two methodologies is the sampling process. Ethnographic designs encourage purposive sampling whereby participants are identified according to their experience and knowledge related to the

phenomenon. This means that the participants are purposely selected before the beginning of the data collection process (Charmaz, 1990). Grounded theory on the other hand adopts a unique approach in the form of theoretical sampling, in which theoretical sampling techniques are adopted with the aim of supporting the building of theory (Glaser, 1992, Glaser and Strauss, 1967). Researchers adopting an ethnographic approach are more concerned with defining cultural meaning behind the chosen topic or concept, thus giving more consideration to a particular aspect of culture and so utilize purposive sampling (Miles and Humberman, 1994a). In relation to the research question and aims and objectives of the study, these could be more effectively addressed through purposive sampling.

Another difference between the two is whether the literature should be reviewed before or after the data collection phase. It has been suggested that, within grounded theory, review of the literature should not be implemented before any data collection to avoid any influence from the literature (Glaser, 1978, Charmaz, 1990). However, this fits with more of the classical grounded theory, whereby the researcher avoids any preconceptions to remain opening minded to what is seen within the field (Hallberg, 2010). In the case of the study's aims and objectives, Phase one of the research process adopted a structured and systematic approach to review relevant studies in light of the paucity of evidence (Carey, 2018a). This led to the generation of recommendations that informed the next stage or research, which could be conflicting in light of Glaser's opinion to encourage the research to put aside his or hers views, without any influence of previous existing evidence (Glaser, 1978, Hallberg, 2010). The theory in ethnography plays an important role in focusing the

researcher's attention, considering firstly a broad explanation as to what they hope to find, which is drawn from theory (Fetterman, 2009, Creswell, 2013). Again this aligned with the objectives for the systematic review in phase to determine what was already known about the experiences of PAL among student nursing in the clinical environment (Carey et al., 2018a). Furthermore, ethnographers use the theory to look for patterns and develop a complex, complete description of a culture-sharing group through extensive fieldwork (Fetterman, 2009). This further lends itself to the exploration of multiple participant groups, but also in adding in further phases of the research process, which aim to synthesis all evidence in the development of a conceptual model through meta-ethnography.

Ethnography vs phenomenology

Other considerations to qualitative methodology included phenomenology. Phenomenology like grounded theory and other interpretivist approaches seeks to collect and analyse data from the participants' perspective, however, phenomenology concerns itself with 'lived experiences'. This often limits data collection to interviews, with data presented as rich description of these experiences as drawn from during data analysis (van Manen, 1990). An aim of the study sought to determine the types of interactions that occur as part of PAL in the clinical setting, which sought a different approach to data collection through non-participant observations. This provided a more fitting option for data collection in line with an ethnographic approach and thus limited fitting with a phenomenological approach. Furthermore, consideration was given to the recommendations put forward within the

systematic review as part of phase one, which encourages the consideration of a different methodological approach (Carey et al., 2018a).

Ethnography vs case studies

Additional considerations to qualitative methodology also included case studies. Case studies as an approach within the interpretivist paradigm presents uniquely with some arguing it as a methodology (Creswell, 2013) with others considering it more as a choice of what is to be studied (Stake, 2005). In relation to interpretivism case studies involved the study of case within a real life setting, which can include an event a person or a programme (Yin, 2014, Pearson et al., 2015). The main commonality is that case studies adopt the use of multiple sources of data for analysis (Creswell, 2013, Pearson et al., 2015). However, many argue this in light of multiple methods to achieve this including quantitative and mixed methods (Stake, 1995, Pearson et al., 2015). Due to the challenges of clear definition within case studies and links to interpretivism, the author decided not use this approach for their study.

3.2 Phase two: ethnographic observations

Introduction

Within this section, the chosen methodology will be explored in relation to Phase two of the research process. This contains an in depth consideration of the methodology and methods that were chosen for data collection and data analysis. This follows

consideration of the research protocol submitted for ethical approval and includes all stages of study within Phase two (Appendix VIII).

The contents of this section will include the following:

- Participants, including sampling, methods of the approach for selection, sample size, inclusion and exclusion criteria.
- Ethics, with overview of the process that was taken to ensure ethical consideration and approval for all stages of ethnographic observations.
- Setting, with overview of details of clinical setting, participant characteristics and their presence in the clinical area.
- Methods for data collection and data analysis.

3.3 Participants

Sampling

Purposive sampling was used for this study in line with the chosen methodological approach (Charmaz, 1990) as it enabled the researcher to think critically about the parameters of the chosen population to study. This ensures that the correct individuals, group and setting were selected to best fit the criteria for the research question (Silverman, 2014). A sample size of between 4-12 students within each participant group were chosen to be observed across all stages of data collection in Phase two.

Achieving the correct sample size in qualitative research is an unresolved case (Trotter, 2012). However, most qualitative studies utilise smaller samples as the focus is upon establishing meaning through rich data and less on occurrences. This offers some confliction when considering interpretivist methodological approaches like ethnography and grounded theory, which some researchers encourage higher number of participants compared with other methods like phenomenology (Morse, 1994, Creswell, 2013). However, size does not mean significance or align with the rationale for purposive sampling (Charmaz, 1990). In fact, a large sample can be laborious for the researcher to analyse and there comes a point where data can become repetitive or superfluous if a sample is too large (Ritchie et al., 2014).

Students, in line with an ethnographic approach were purposively selected for all stages of Phase two, based upon location and timing of placements to ensure that the researcher obtains a sample across all years of programme study across the chosen research sites. The Participant Information Sheet (PIS) and consent forms within the research protocol, created by the project lead and guided by standards outlined by the Health Research Authority (HRA, 2016) provided a detailed overview to students outlining the project and provided the method for gaining signed consent.

It was important that consent was voluntary and that the students did not feel coerced, or subject to undue influence or enticement (Edens et al., 2011). As the researcher was known to the students, the participants were approached by a third party in the form of the local placement development team lead (PDT) who was able to provide students with copies of the PIS and consent form. Following this,

participants in the study were free to withdraw anytime. Those who participated who may of later changed their mind could contact the project lead up to two after the end of each period of data collection, prior to data analysis as specified in the PIS.

The student samples were purposefully selected from a range of first, second and third year students on the programmes BSc (hons) Nursing: Child Health and BSc (hons) Nursing: Adult according to their clinical placement area. Students who had a current placement in sites one (Royal Cornwall Hospital Trust, RCHT) and two (Plymouth NHS Trust) across four paediatric in-patient clinical areas in site one and six clinical areas in site two. All identified students were all be given the opportunity to participate in the research project.

Participant allocation site one, stage one

The sample frame of students on investigation showed eight Child Health Nursing students who had placements allocated between the months of May 2015 to July 2015 across the four identified clinical areas. Five of the students were in the first year of study, while the remaining three were in the third and final year of study. No second year student nurses were currently on placement at this time due to the timing and structure of the BSc programme. All eight students identified were given the opportunity to take part in the study. To avoid coercion and intimidation students were approached by a third party in the form of the placement link lecturer for the Cornwall clinical area to provide the PIS information and to obtain consent for the research project. From these selected five chose to take part in the study.

Participant allocation site two, stages two and three

Site two as identified in table 1 were made up of two separate participant groups. One group containing Child Health Nursing students and another participant group from the field of Adult Nursing. In stage two the sample of child health nursing students showed 12 students who had placements allocated between the months of November 2016 to December 2016 across four identified clinical areas. Nine of the participants were in the second year of study and three were in their third and final year of the programme. No first-year student nurses were on placement due to the timing of the placement, which noted that they were in theoretical teaching at this time. To avoid coercion and intimidation students were approached by a third party in the form of the placement link lecturer for site one to provide the PIS and to obtain consent for the research project. From these selected five chose to take part in the study.

In stage three the sample of child health nursing students identified 11 students who had placements allocated between the months of June 2017 to July 2017 across two identified clinical areas. From the participants three were in their first year of study, three in their second year of study and five in their third and final year. As in previous stages students were approached by a third party in the form of the placement link lecturer for site one to provide the PIS information and to obtain consent for the research project. From these selected seven chose to take part in the study.

Withdrawal criteria

Participants groups across all stages of Phase two were given the option to withdraw up to two weeks of the end of data collection otherwise the data was included in the analysis making not be possible to remove it after that. Any information obtained from students up until that point in time was, wherever possible, not be used and would be destroyed. All included participants across all stages and site chose not to withdraw during the time of data collection.

Inclusion and exclusion criteria

Inclusion criteria:

- Male and female participants aged between 18-55 years old.
- Students enrolled on BSc (hons) Nursing: Adult, Nursing: Child & Nursing: Mental Health programmes.
- Undergraduate nursing students who are based in the acute clinical placement area in the Plymouth and Cornwall area.
- Students who are able to give informed consent to take part in the study.

Exclusion criteria:

- Participants who are not aged between 18-55 years old.
- Participants who are not registered on a BSc (hons) Nursing: Adult, Nursing: Child & Nursing: Mental Health programme.

- Undergraduate nursing student who are not based in the acute clinical area or who are outside of the Plymouth Cornwall area.
- Students who are unable to provide direct written consent prior to the study.

Table 4: Overview of participant information for all stages of study

Study	Number of participants invited to study	Number of consenting participants	Characteristics of study participants	Accumulated hours spent in observation
Study One: Cornwall Child Health Nursing	6	5	-5 female participants enrolled on BSc(hons) Nursing: Child Health programme -All aged between 18-55 -Three students in their first year of study -Two senior students in their third (final year of study)	35
Study Two: Plymouth Child Health Nursing	12	12	-1 male and 11 female participants enrolled on BSc(hons) Nursing: Child Health programme -All aged between 18-55 -Eight students in their second year of study -Three senior students in their third (final year of study)	32
Study Three: Plymouth Adult Nursing	11	7	-7 female participants enrolled on BSc(hons) Adult Nursing -All aged between 18-55 -Three students in their first year of study -One student in their second year of study -Three senior students in their third (final year of study)	32 **Total hours: 108**

3.4 Ethics

Approval for the study was sought through the University Research Ethics Committee (UREC) designed to protect participants who are involved in research (University of Plymouth, 2013). It has been discussed earlier the core principle of avoiding coercion and intimidation of participants enrolled on the study. However, in order to ensure the highest standard of ethical conduct both the individual gaining consent and the principle investigator were in hold of a Good Clinical Practice Certificate (GCP). Completion of the GCP ensures the public that wellbeing, safety and rights of participants are upheld and protected in accordance with the National Institute for Health Research Clinical Research Network (NIHR CRN, 2016). The third party seeking consent provided the participants with appropriate time to fully read the PIS and to ask any questions about the study.

Part of the core ethical principles is that participants who choose to consent to the study need to have assurance that any information about them in kept confidential and anonymity maintained (Ritchie et al., 2014). In order to maintain this, participants were allocated with a pseudonym when writing field notes and during the write up of the study. It was explained to the participants that any data collected about them will remain confidential and only be used for the purposes of the study. Names will not be included in any publications or conferences, and hard data including consent forms will be locked away in a secure cupboard within the faculty for 10 years from publication date in accordance with the Data Protection Act (Great Britain, 1998) and approved by UREC (HRA, 2016).

Ethical approval for the pilot study was sought and obtained through the University of Plymouth Faculty & Students' Ethics Committee. Ethics approval was also sought from NIHR NHS ethics and approved on 7th May 2015 for site one of the research project. Due to a limited sample a decision was made to extend the study to include a wider sample, but to also make changes to the research site and to include adult nursing students along with child health nursing.

Alterations were made to the original ethics application to include the changes mentioned above. This was approved on 17th February 2016 by the students' ethics committee. Ethics approval was also sought from Plymouth NHS R&D ethics and approved on 19th October 2016, following approval of amendments from the HRA on the IRAS document on 9th September 2016 (IRAS: 187233, Appendix VIII).

The chosen participants for all stages of the study within Phase two were approached by a third party link lecturer to gain consent as indicated in section 3.3. When the primary researcher met with the students on days chosen to complete the observations it was made clear my role of dual-researcher. Students were informed that I was a lecturer in Child Health Nursing, but that in the context of the study my role was as a primary researcher and not to assess their current practice, further highlighted in the PIS. However, it was also discussed with students my role as a registered nurse and that it would be necessary to intervene if the risk to implementing bad practice was presented during observation, either in practice or within conversations between students.

3.5 Setting

The observations for all stages of study in Phase two were conducted across 10 clinical areas within two sites; the Royal Cornwall Hospital Trust (RCHT, site one) and University Hospitals Plymouth NHS Trust (site two). Site one, the RCHT, provided four clinical areas as outlined in Table 5, as part of stage one. The RCHT is the largest hospital in Cornwall, hosting 750 beds and providing services to a population of 430,000 people across adult and children's services. Site two, University Hospitals Plymouth NHS Trust, provided six clinical areas as outlined in Table 5, as parts of stages two and three. University Hospital Plymouth NHS Trust hosts over 1000 beds covering a range of specialist services including cardiothoracic and neurosurgery. Both sites are teaching hospitals linked to the University of Plymouth.

Table 5: Characteristics of the settings for observation

Site one: RCHT, stage one			
Clinical area	**Beds**	**Ages (in years)**	**Shift patterns**
Paediatric Ward	12	0-12	07:30-20:30, 19:30-08:00
Children's Assessment Unit	>22	0-18	07:30-20:30, 19:30-08:00
Adolescent Ward	14	13-18	07:30-20:30, 19:30-08:00
Oncology Ward	8	0-18	07:30-20:30, 19:30-08:00
Site two: Plymouth Hospital NHS Trust, stage two			
Paediatric Ward	14	0-10	07:30-20:30, 19:30-08:00
Children's Assessment Unit	>24	0-18	07:30-20:30, 19:30-08:00, 09:30-22:00
Adolescent Ward and Oncology	12	11-18	07:30-20:30, 19:30-08:00
Children's High Dependency Unit	4	0-18	07:30-20:30, 19:30-08:00
Site two: Plymouth Hospital NHS Trust, stage three			
Orthopaedic Inpatient Ward	29	18+	07:30-20:30, 19:30-08:00
Orthopaedic Major Trauma Ward	33	18+	07:30-20:30, 19:30-08:00

Site one RCHT, as part of stage one provided four inpatient paediatric clinical areas joined together in an open plan environment. Site two, University Hospitals Plymouth NHS Trust within stage two offered four in-patient paediatric clinical areas and one outpatient department. The outpatient department, within site two, was not included in the setting choice as no student nurses were allocated to this clinical area. The four remaining areas were located on the same floor, but separated into different locations. Site two, within stage three offered two orthopaedic ward and one orthopaedic assessment unit, located on the same floor. The orthopaedic assessment unit was not included as no students were allocated to this placement area. The characteristics of study participants as allocated to each stage of Phase two are identified in Table 6.

Table 6: Characteristics of the study participants

Stage one:					
Study participant	**Gender**	**Age**	**First-year student**	**Second-year student**	**Third-year Student**
1	Female	20	X		
2	Female	22	X		
3	Female	44	X		
4	Female	23			X
5	Female	25			X
Stage two:					
Study participant	**Gender**	**Age**	**First-year student**	**Second-year student**	**Third-year Student**
1	Female	21		X	
2	Female	23		X	
3	Female	21		X	
4	Female	24		X	
5	Female	24		X	
6	Female	28		X	
7	Female	24		X	
8	Female	20		X	
9	Female	22		X	
10	Male	33			X
11	Female	24			X
12	Female	25			X
Stage three:					
Study participant	**Gender**	**Age**	**First-year student**	**Second-year student**	**Third-year Student**
1	Female	20	X		
2	Female	21		X	
3	Female	20	X		
4	Female	26	X		
5	Female	36		X	
6	Female	22			X
7	Female	24			X

3.6 Data collection

The study was conducted through the use of non-participant observations with the observer keeping field notes in short summary format to record activities and

interpretation of these. This choice for observations as the method of data collection has been beneficial in obtaining rich data through studying the behavioural interactions between registered nurses in previous studies (Caldwell and Atwal, 2005, Roberts 2008, Roberts 2009). This method of data collection also encourages the researcher to enter the field or the natural setting of the participant keeping in line with an ethnographic methodology (Denscombe, 2014). Observations are generally categorised into two distinct approaches; structured and unstructured (Pretzlik, 1994). The aims for the study are interested in the cultural behaviour related to an unstructured observation method, providing benefits such as insight into the interactions between groups of individuals, and to capture an illustration of a wider picture (Mulhall, 2003).

Data collection included observations of formal and informal interactions that occurred among students and mentors while carrying out normal clinical practice activities. Observations took into account recordings of; verbal communication including; what topics are discussed in relation to the clinical environment and where they are being observed and areas of learning. Examples included; day to day clinical tasks within the clinical area; and interactions with other healthcare professionals and patients. Non-verbal communication was also observed to study the students' responses to each other in relation to areas such as understanding of tasks and topics that students discuss in relation to their learning. The focus of observations also included any teaching support and guidance offered by or to peers in relation to their day to day duties in the clinical area, for example using medical equipment, documentation and other general nursing duties.

Active listening, within communication, was also be observed to determine the students' abilities to pick up on the behaviours of other students, especially in relation to relationships and conversation between junior to senior students and vice versa. This also took into account observations of interactions linked to mimicking behaviours of clinical tasks and professional conduct. Observations considered finally the emotions expressed by the students during peer interactions and to areas of consideration that these emotions relate to such as levels of confidence and anxiety. Observations were made between 07:30 to 20:00 Monday to Friday to cover the length of the average nursing shift. The periods of observation ranged between one to five hours. Field-notes were written immediately after each period of observation.

It has been considered that the method of unstructured observations provides challenges in the area of recording field notes (Mulhall, 2003). However, specific capture of information was undertaken through the use of both note book and recoding through the use of Dictaphone. The purpose of one notebook was to record summaries of general information that relates to the observations, e.g. summary of general information focused on interactions and behaviours, communication, tasks undertaken, conversation content, emotions expressed in relation to the key areas described above (Merriam, 1998). A Dictaphone was utilising to capture the bulk of information given the option for more rapid recording of observation and minutes that identify when interactions with other healthcare professionals and clients are occurring, and include information such as; who talks to whom, whose opinions are respected, how decisions are made. The multiple method of recording field notes has been shown to alleviate the clutter of extraneous

information that can occur when conducting observations (DeMunck and Sobo, 1998).

The observations were conducted without concealment and without intervention. A short period of ‘dummy’ observations were implemented to avoid the Hawthorn effect and to give students the opportunity to relax into the situation of being observed by myself as the researcher (McCambridge et al., 2014). This is to allow for the observation sessions undertaken after this point to continue to encourage more natural behaviour from the students.

The use of the researcher as the observer, and the social and qualitative nature of the data collection, could make it likely that the researchers’ presence may have an impact on the behaviour of the nurses themselves. In order to minimise these effects a number of strategies were considered and implemented:

- Taking the time to build a rapport with the student nurses being observed through the use of a few practice ‘dummy’ observations.
- Spending enough time across all included clinical areas to enable for the students and clinical staff to get used to the presence of the researcher.
- Stressing the point on my clinical background and interest in peer-assisted learning as the focus for the research and not to ‘assess’ the students in practice in relation to my academic role

3.7 Hawthorne effect

One topic that needs to be raised as a point of recognition is the significance of participant awareness in relation to the Hawthorne effect. The Hawthorne effect, which is also known as the 'observer effect' refers to the reactivity of the participants in the presence of the researcher who will alter their behaviour or actions in response to being observed (Sedgwick, 2012). This is well documented in a recent systematic review carried out to elucidate its existence, which identified some indications of changes in participant behaviour across the nine included studies (McCambridge et al., 2014). This is also one of the main criticisms of ethnographic research that the 'observer effect' creates bias and therefore invalidate any research findings (LeCompte and Preissle-Goetz, 1982). Monahan and Fisher (2010) argue that in response to bias that ethnographers can argue that the performance of the participants, 'however staged for or influenced by the observer-often reveal profound truths about social/and or cultural phenomena'. (p358)

Although the evidence presents the question that this is difficult to avoid, there are many questions that are asked about whether it exists, how and why and for how long? The systematic review by McCambridge et al. (2014) attempted to review these questions and determined that consequences do exist in relation to the Hawthorne effect. However, there is inconclusive evidence about the conditions under which they operate, the mechanisms of effect or the impact, which requires further research. What was interesting from an observation point of view is that after 40 minutes of initial observation students across all sites and participant groups appeared to be more relaxed in their body language and forget they were being

observed. In light of the research the primary investigator, decided upon removing the first 60 minutes of data within all initial observations at the start of the study to avoid the potential for observer effect.

3.8 Data saturation

The discussion regarding data saturation is one that offers many challenges to students undertaking qualitative research to determine when this point has been reached (O'Reilly and Parker, 2013). This especially true in relation to ethnography due to the nature and in some consideration the extent of data collection (Creswell, 2013). Mason (2010) offers specific guidelines for doctoral students to provide detailed discussion linked to data saturation in qualitative research. However, these guidelines have been challenged as being outdated in relation to references used and therefore in need of some revising (Fusch and Ness, 2015). Suggestions for knowing when the point of data saturation is reached include; enough information is collected to replicate the study, when further coding is no longer feasible and when the ability to obtain any new and additional information has been obtained (Fusch and Ness, 2015). However, Fusch and Ness (2015) do go on to suggest that students need to seek an appropriate study design that is explicit in how data saturation can be achieved. Liu and Maitlis (2010) in consideration of non-participant observations suggest that saturation occurs when further observations reveals nothing new to the researchers understanding. This was the case in point when considering the observations that were undertaken with all participant groups across the two sites.

3.9 Data analysis

Framework analysis

Thematic analysis provides one of the most common forms of analysis in qualitative methods of research as it aims to focus on discernible themes or patterns within the data (Aronson, 1995). This method has been used effectively in previous studies included within the literature review and was deemed the best method to align with the research aims and objectives (Christiansen and Bell, 2010, Walsh, 2015). Thematic analysis has been viewed in the past as a poorly branded method, in comparison to similar methods of data collection and is often confused and used interchangeably with content analysis (Vaismoradi et al., 2013).

Following periods of observations for stage one and two within Phase two of the research process, field data were reviewed and then and written up shortly afterwards in an electronic format. Field notes are generally written descriptively and can become messy, therefore, the process of typing these convert them into a readable format and allow them to take on a more analytical state (Blackstone, 2012). The exploration of interactions, relationships and frequency of episodes of behaviours were carried out and displayed through the use of a coding matrix, as this was considered to be the most effective method for identifying common themes (Schutt, 2015). Following this initial process qualitative data were analysed using the Framework approach (Ritchie and Spencer, 1994). This method of data analysis fits within a wide family of analysis methods, which are often linked to the term of thematic analysis or qualitative content analysis (Gale et al., 2013). This particular method has been popular since the 1980s and fits well with social policy research

(Ritchie et al., 2014), however it has seen a growth in usage in recent qualitative healthcare research (Low et al., 2017, Lacorossi et al., 2018). This is due, in part, to its ability to identify commonalities and differences and draw together relationships within the data and draw descriptive conclusions clusters around themes (Gale et al., 2013).

The design of the Framework approach enables the researcher and others to analyse qualitative data through five stages; familiarisation; identifying a thematic framework; indexing; charting; mapping and interpretation (Ritchie and Spencer, 1994). However Gale et al. (2013) argue, in their analysis of this method, that it takes a seven step approach; transcription, familiarisation, coding, developing a working analytical framework, applying the analytical framework, charting data into the framework matrix and interpreting the data, which in review puts keen emphasis of the transcription as an important part of the analysis process. Through the Framework method, the floor is open to allow for themes to be developed from both the research questions and objectives as well as from the narratives taken from field notes (Ritchie and Spencer, 1994). In the context of the current study, the seven step process was used within the analysis process to provide further description and clarity in relation to field notes in stage one (Figure 3).

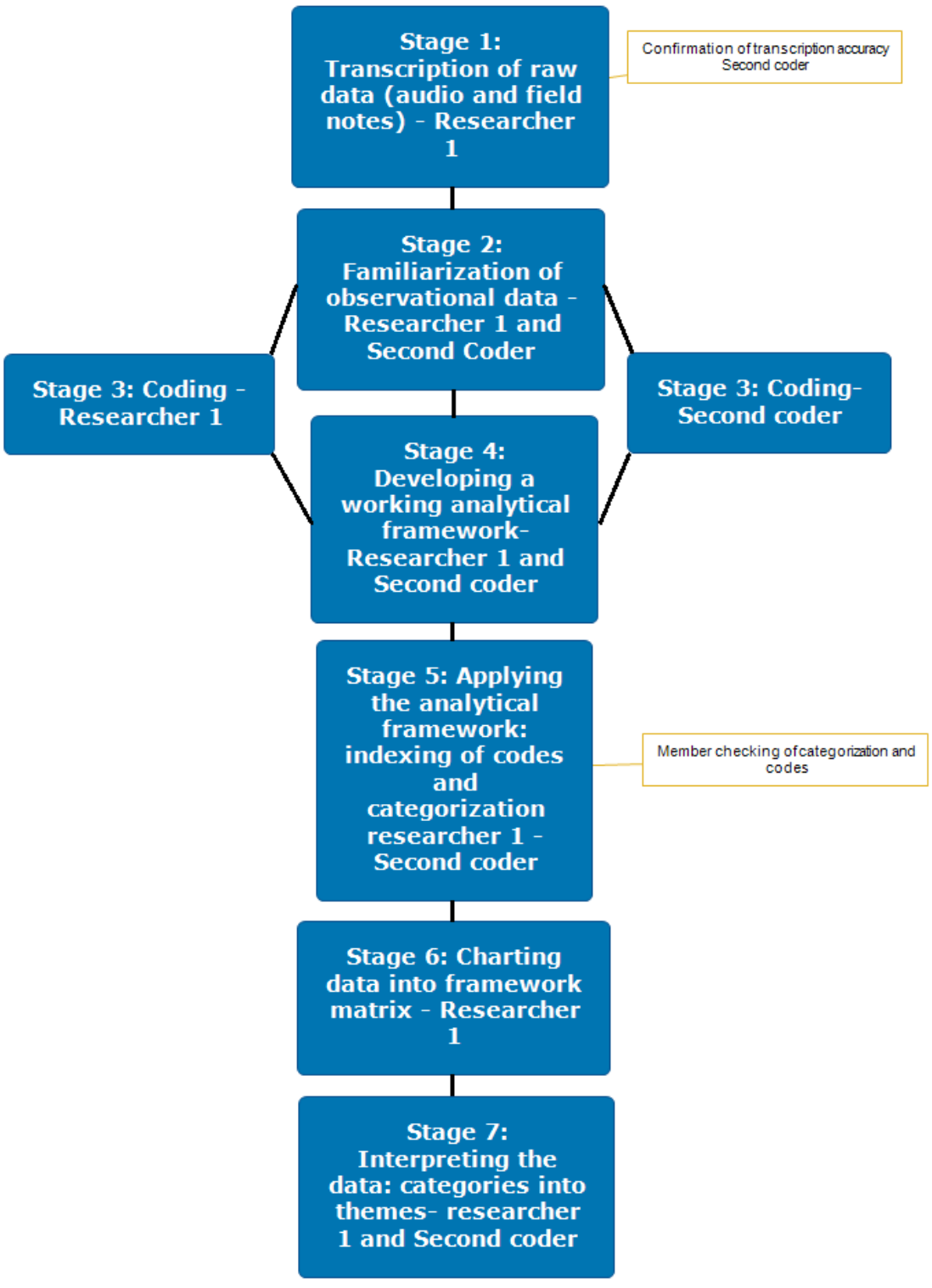

Figure 3: The Framework approach, adapted from Ritchie and Spencer, 1994

Stage one took the form of transcription to encourage an improvement of quality in field notes or chosen qualitative method such as recordings, by taking rough formats and transcribing to a complete, readable format (Gale et al., 2013). Recordings via Dictaphone and written field notes collected as part of non-participant observations were taken from their rough format and transcribed into a word processing document for each of reading.

Stage two involved immersion and becoming familiar with the recorded and written field notes as a vital stage of interpretation. Within this process analytical notes, thoughts and general impressions were added to the word processing document. Within stage three the primary investigator read the transcript carefully line by line and added a ‘code’ in the form of a paraphrase or label to describe what was interpreted in the field notes as being important (Figure 4).

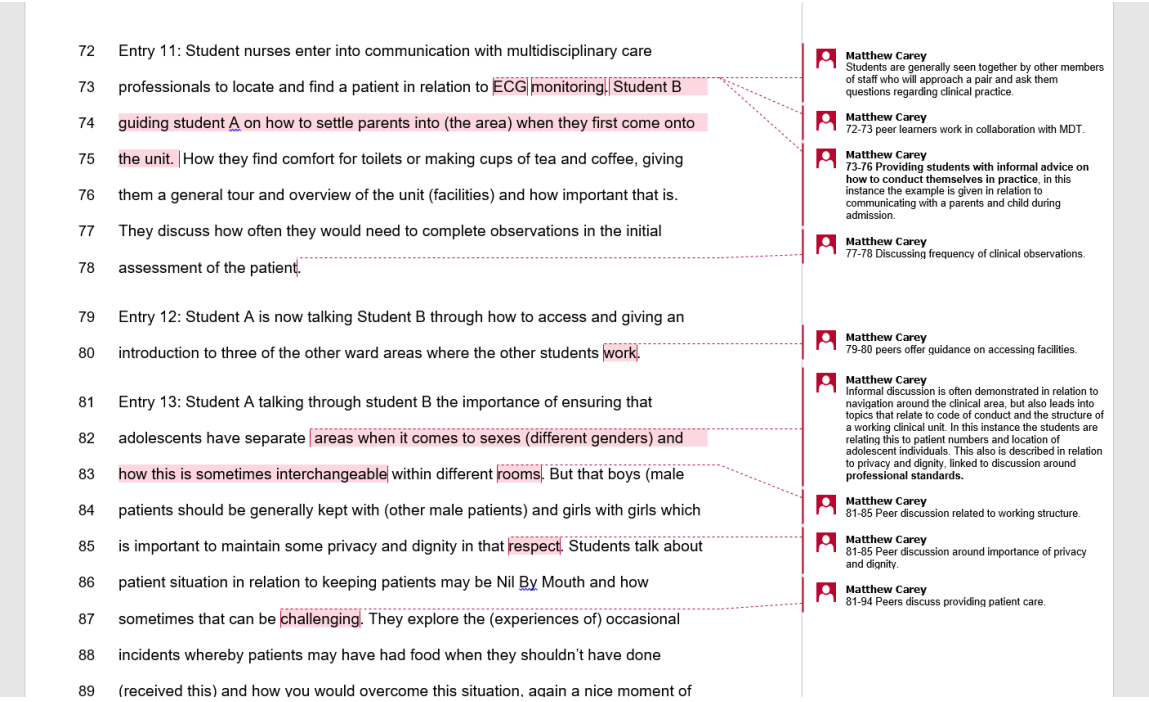

Figure 4: Framework analysis, stage 3, example of the coding process

For Stage four, developing a working analytical framework, it is advised that the research team should meet to compare the labels and codes that have been assigned. For the current study, the first and second coders met to consider these codes and make amendments where required. The codes were then independently grouped together into categories which are clearly defined in Figure 5:

	A	B	C	D
1	Informal interaction for teaching, learning and discussion	Postive interaction for communication and questioning	Collaborative advice, assurance and clarification.	Discussion linked to best practice stand
2	6-10 Informal teaching on taking observations	243-249 Students openly ask each other questions ad hock.	73-76 Providing students with informal advice on how to conduct themselves in practice.	68-71 Open discussion about confidenti
3	27-29 Informal teaching on using clinical electronic equipment.	355-358 Respect of peer knowledge and understanding through communication.	169-174 Seeking direction and guidance of clinical task from peer.	81-85 Peer discussion around importan
4	39-45 Informal teaching on completing patient admission documentation.	597 Peers ask open questions about how they are settling in.	194-198 seeking clarification of actions related to clinical task.	101-103 Peer discussion on the importa
5	58-64 Informal teaching on medicines administration.	598 Peers speak openly and honestly about practice.	227-229 Peers clarify accuracy of actions taken as a pair.	138-145 Informal discussion on priorits
6	125-137 Informal teaching and discussion on how to use wrap medical equipment.	640-642 Peer communication is observed as being fluid.	283-286 Peers seek assurance from their peers when completing clinical tasks.	279-282 Students discuss clinical guide
7	169-174 Informal teaching on using medical equipment.	642-643 Peers ask very open and honest questions to each other.	310-314 Peers offer each other instruction and clarification.	322-325 Peers draw from clinical guidel
8	232-268 Informal teaching and demonstration of completing clinical task.	644 Student questioning related to placement.	319-320 Peer asks another peer for advice on taking a temperature.	343 Discussing the importance of confic
9	287-290 Peers set each other goals for finding information.	645 Peers appear to be receptive to being asked open questions.	322-323 Peer offers advice to another peer.	346-349 Peers discuss practice related
10	398-400 Informal instruction and discussion on effective documentation.	449-452 No limit on questions asked between junior and senior.	328-331 Peer asks peer to confirm clinical observation.	343-346 Peer pair discuss documentati
11	443-446 Informal discussion reviewing clinical task completed.	483-484 Peers communicate openly in their designated roles.	337-339 Peers clarify results when each taking a temperature.	343-346 Peer pair discuss clinical condi
12	551-556 Open discussion about how to record documentation.	648 Some peers are more reflective in their questioning.	388-390 Seeking of advice and questioning from junior to senior peer.	381-384 Peer pairs discuss significance
13	554-556 Informal discussion on ensuring documentation is factual and clear.	646 One peer is more open and chatty in her questioning.	390-392 Senior peer offers advice and feedback to junior peer.	398-400 Informal instruction and discus
14	557-558 Informal discussion on the importance of consent.	676-677 Peer encourages peer to ask questions any time.	396-397 Senior peer provides supervision and guidance to junior.	434-440 Professional discussion about
15	568-569 Students openly offer to show each other how to use the patient monitor.	678 Peers feel comfortable with peers observed through 'chatty' conversation.	407-410 Senior peer offers advice to junior.	497-499 Peers appear to be aware of th
16	551-552 Peers each share their thoughts on how to document effectively.	678-679 Peer is happy with asking colleague lots of questions.	414-416 Seeking advice from peer when asked a question.	558 Peers ask open questions about im
17	553-555 Peers discuss and set standards for documentation.	680-681 Peer questions pertain to understanding medical equipment.	416-418 Senior provides junior advice around patient care.	572-573 Peers discuss concepts of safe
18	557-558 Informal discussion on the importance of consent.	715-716 Professional communication observed.	430-431 Advice from senior peer on how to conduct observations.	610 Peers discuss family centred care.
19	564-565 Peers discuss policy and use this as a resource for developing knowledge.	733-735 Peers find it helpful to have peer on hand to ask questions RAW.	431-432 Peers ask for advice on techniques for performing tasks.	611 Peer pair discuss policy related to f
20	570-573 Informal discussion amongst peers on the importance of documentation.	736-738 Accessibility of peers makes it easy for a peer to answer a question.	437-440 Junior peer values the thoughts from senior.	709-711 Peer pair discuss the topic of p
21	583-585 Peer provides informal guidance on understanding and completing admission paperwork.	750-752 Peer trio share open and relaxed conversation.	449-452 Clarification of task with peer increases confidence.	712 Peer pair discuss media in relation
22	586-587 Peer teaches the basic principles of completing patient admission.	753-754 Peer trio use mirror match and paralinguistic examples of communication.	457-458 Senior students guides junior through navigating patient notes.	711-714 Peer pair discuss social media
23	590-591 Practical demonstration on using electronic drug charts.	558 Peers ask open questions about implied consent.	461-462 Junior peer is happy to receive instruction from senior peer.	741-742 Peer trio discuss how to raise c
24	648-649 One peer takes on a natural teaching role towards guiding peer colleague.	831-832 Communication between four peers is fluid.	487-488 Students use each other for advice on documentation and clarification of information.	778-780 Peer pair collaborate to discus
25	761-762 Teaching session is open to both third year and first year students.	832-833 Humour is present during peer communication.	489-490 Students ask each other for advice on medical terminology.	783-784 Peer pair discuss the importan
26	769 Nurse mentor takes time to deliver a peer teaching session on medicines administration.	840 Social humour is engaged between senior and junior peers.	490-492 Peer who is in unfamiliar role seek more collaboration from a student colleague.	797-802 Peer pairs discuss the principl
27	769-772 Third year student supporting learning of three first year peers.	859-860 Peers demonstrate intent in their engagement of conversation.	493-494 Student openly provide directive and guidance to their peer.	802-804 Peer pair discuss drug dosage
28	772-774 Third year asks junior peer to demonstrate hand hygiene technique RAW.	860-861 Peers utilise active listening within peer communication.	495-497 Rationale for actions is discussed amongst peers.	799-802 Peer pair discuss weight in rel
29	775-776 Trio peers complete hand washing under guidance of third year peer.	893-895 Senior peer appears happy to answer ad hock questions from junior peer.	519-521 Third year peers often make suggestive comments and seek reassurance when in passing	822-825 Peer trio discuss the importanc
30	776-777 First year per pair offer each other guidance on hand washing technique.	938-939 Senior peer pair engage in personal conversation during ad hock meeting.	673 Roles and questions are clarified between peers.	
31	780-782 Nursing staff encourage peer collaboration during teaching task.		709 Peer pair openly ask each other for advice.	
32	785-790 Peer pair use each other to work out drug dosages RAW.		715-716 Peer pair share their understanding of conversation.	
33	791-793 Clinical area encourages peer learning and teaching opportunities.		754-756 Students use questioning to seek advice and guidance.	
34	794-796 Peer pairs are encouraged to collaborate and share ideas to support and teach one another.		841-842 Junior peer seeks clarification of drawing up medication task form senior peer.	
35	805-807 Third year peer offers advice and guidance to first year peer trio RAW.		842-843 Senior peer uses questioning to confirm understanding of junior peers.	
36	805-807 Formal teaching from senior peer on drug formula calculations RAW.		843-847 Junior peer shares interpretation to seek assurance from senior peer RAW.	
37	808-811 Third year peer offers advice and guidance on six R's of drug administration RAW.		870-871 Advice from senior peer is open and honest.	
38	812-815 Peer support related to achievement of clinical competency.		871-873 Junior peers are receptive to advice from senior peer.	
39	817-818 Peer support in practical session of drawing up of medication		895-897 Advice offers by senior peer is evidence based	

Figure 5: Framework analysis, stage 4, example of categories within developing a working analytical framework

Stage five involved application of the analytical framework by indexing the codes and the categories so that they were easily identifiable and could be written directly onto the transcripts. Stage six involved charting the data into a framework matrix. Here, the initial codes were entered into a spreadsheet to enable the data to be added to a framework, and summarised within a smaller table (Figure 6).

Indexing reference to data	Data extracts examples	Codes within categories/Sub-themes	Categories/ Sub-themes	Summary of category/Sub-theme for matrix	Notes, thoughts
6-10, 443-446, 27-29, 583-587, 125-137, 169-174, 568-569, 39-45, 398-400, 570-573, 58-64, 590-591, 232-268, 648-649, 767-777, 827-842, 907-909.	*'You need to make sure that we add in the observation data into each field. This indicated their PEW level and can be flagged up to the doctor.'* [StAx2, W4].	Informal T&L linked to taking observations Informal T&L for medical devices and equipment Providing informal guidance and instruction (Links: Openly seeking advice from peers) Informal teaching on documentation Medicines administration as informal clinical task Goal setting for peers Natural role of T&L T&L support from senior peers	Informal interaction for teaching, learning and discussion	Multiple incidences of teaching and development of learning centres around the understanding and use of clinical equipment in order to undertake the role of a student nurse in practice. These incidences are informal, but take context from examples of instruction, goal setting and confirmation of task. This is not limited to any one group of peers, but is evident in other interactions. Some occasion created for senior peer guidance to junior peers to offer instruction, and guidance for learning, however, interestingly the incidence of senior-to-senior peer teaching and learning was not seen during observations. Multiple codes on occasion link to similar incidences, therefore these have been drawn together to consider the context for discussion within the analysis.	Informal T&L Goal setting Providing instruction Guidance for learning
243-249, 355-358, 715-718, 449-452, 579, 640-645, 646-648, 676-679, 733-736, 749-	*that's great, thanks for letting me check, I feel more ready to give it a go now.'*	Frequent opportunity to ask open questioning Questioning for confirming and clarifying understanding Natural and fluid open communication	Positive interaction for communication and questioning	Student peers engage in regular and positive open communication, which is centred on them creating an environment for asking open and fluid questioning. The context for questioning is present in both ad hock and general pairing of peers together in clinical practice, seen between junior pairing and junior to senior. Questioning between students provides an	Links to positive communication.

Figure 6: framework analysis, stage 6, extract from data charted into framework matrix

Interpreting the data by converting categories into themes formed the final stage of the framework analysis process. This was completed by the primary investigator and discussed with the second coder. Any discrepancies in this process as well as previous stages were discussed with the supervisory team, which is encouraged within the process (Gale et al., 2013). This process takes time, which is an important

consideration to ensure that the themes that emerge offer the same structured consideration as in previous stages (Figure 7).

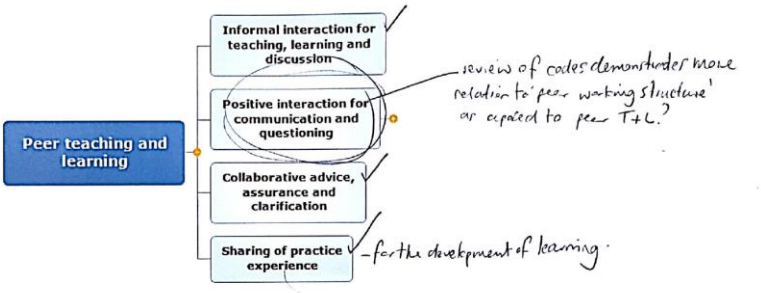

Figure 7: Framework analysis, example of early theming for discussion

Considering the structured approach that was utilised for data analysis and following the emergence of the themes, sub-themes and categories, the decision was made to present the data in the form of a new PAL framework model that could be used as a visual representation of the final outcomes from the data analysis process (Figure 8).

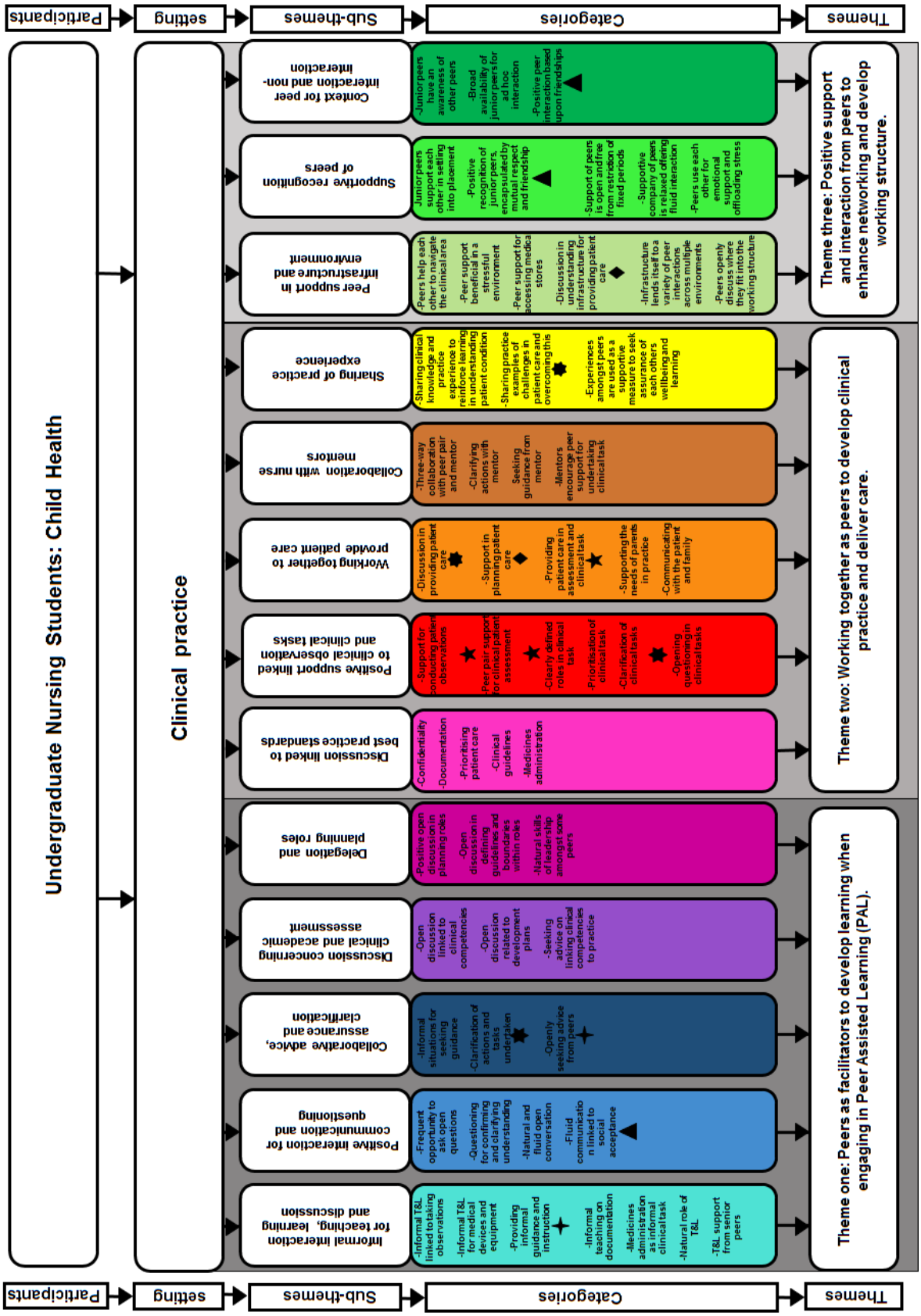

Figure 8: Framework model for PAL, following framework analysis

Figure 8 presents the final representation of the framework model created through the framework analysis process when analyzing data collected through non-participant observations in stage one. The final framework model presents a structured pathway through which the flow of data is collected and grouped into collections of sub-themes and further condensed into overarching themes.

The columns at both the left and right side of the framework indicate the focus for each section aligned to the adjacent data, which as part of the pathway flows through the model. The first section within the column represents the participants.

The next row in the column indicated the setting for which the observation took place. This is simply presented as clinical practice, which was the focused setting for the research question. Individual areas within clinical practice were coded and represented within the presentation of the findings; however, this was not relevant to the framework model.

The next row in the flow of data is presented in two parts. The first being sub-themes, which are connected by their included categories. From the data analysis 13 sub-themes were identified. The 13 sub-themes are each represented by a white box with the title of the sub-theme included. These are further separated into groupings according to where they align with one of the three key themes.

Each of the presented sub-themes and categories are indicated by thirteen individual colours. The colours selected offer two key functions within the framework model.

The first is to present a clear visual representation, which makes the sub-themes stand out within the model. The second function related to stage 3 in the comparative qualitative analysis.

Categories within each of the sub-themes are indicated. Some include symbols, which can be matched to other categories across different sub-themes. This is to indicate where some categories shared similarities to others when conducting framework analysis.

The development of the model in Figure 8 was further used as a framework in the analysis of data from other groups of student nurses from both fields across site two. Following data collection and transcription of recordings, the presented framework model was used as a method of comparative qualitative analysis (discussed in section 3.11), whereby colour coded constructs of categories within sub-themes could be used and matched against newly collected raw data. This process added rigor and reduced time by surpassing early stages within framework analysis. However, more importantly, it enabled the primary researcher to clearly identify any similarities of categories against the new data and also where there were differences. This method demonstrated an alignment in the themes and sub-themes between the new data against the existing framework model to add strength to its overall dependability, which is later presented as a paper within Chapter 5.

3.10 Rigor, trustworthiness and member checking

An important aspect for consideration within qualitative data analysis is the researcher's awareness and ability to maintain rigor throughout the process and establish trust and confidence in the findings of the research study (Thomas and Magilvy, 2011). The reliability and accuracy of data analysis and its results is the foundation for high quality research (Birt et al., 2016). However, the assurance of both the quality and trustworthiness of research is one of the biggest challenges faced by qualitative researchers (Finlay, 2006). The term 'qualitative rigor', or 'rigour' is related to the quality of being thoroughly accurate, but is often one that is debated amongst researchers and qualitative scholars. Thomas and Magilvy (2011) challenge this term as being in itself an oxymoron due to the qualitative process as being viewed as a journey of explanation and discovery, not limited to stiff boundaries. However, a process of rigor is still argued as one of the most critical aspects of qualitative research (Prion and Adamson, 2014).

Within this study a sole data collector was utilized, which in the context of qualitative research, can potentially give way to researcher bias (Miles & Huberman, 1994b). Therefore, it was important to consider the full process of qualitative analysis and to determine how the process of rigor could be strengthened. As identified by Pope et al. (2000) second coders can be used and inter-relater reliability can be applied, whereby more than one analyst can be used to improve the consistency and/or the reliability of the analysis.

In the context of this study, a second, independent coder was used during the stages of framework analysis (Gale et al., 2013) as presented previously. Comments from the second coder reflected their clear ability to be able to trace back the details within the categories and sub-themes to the data.

Following stage five of the framework analysis, a complete list of codes and categories were shared with the participants, via email, to confirm accuracy of these; a process known as member checking (Richards, 2003, Charmaz, 2006, Birt et al., 2016). Lincoln and Guba (1985) argued that this is a crucial technique for establishing credibility. However, Harvey's (2015) experiences in member checking challenged the effectiveness of this approach. In the current study, only three of the included participants across all groups replied to the email and they were all in agreement with the summary provided; consequently, it was apparent that this process offered limited benefits towards generating any deeper opinion or reflection (Harvey, 2015).

In the presentation of the findings in Chapters 4, 5 and Appendix IX, the student commentaries were coded to ensure the non-identification of the participants. For example [S1,CH1,CH2,W1]: S1 represents site one, S2 is site two. CH1 is a first year child health student, CH2 is a second year child health student, CH3 is a third-year child health student. AD1 is first year adult student nurse, AD2 is a second year adult student nurses and AD3 is a third-year adult student nurses. W1 is adolescent ward, W2 is acute paediatric ward; W3 is paediatric high dependency ward; W4 is

paediatric assessment unit, W5 is paediatric oncology ward, W6 is an orthopaedic ward one and W7 is orthopaedic ward two.

3.11 Confirmatory Qualitative Analysis (CQA)

The framework analysis process led to the creation of the framework model as identified in Figure 8. This provided a template that was then used within a novel approach to analysing the data within stage three of the research.

In light of the paucity of evidence in relation to peer-assisted learning in clinical practice, it was clear that the findings from stages one and two offered new contributions towards the body of knowledge. However, in order to enhance this further, the framework model was tested to further determine its trustworthiness and reliability, an important consideration within the research process (Lincoln and Guba, 1985). In order the achieve this, a unique approach was adopted, which is presented as Confirmatory Qualitative Analysis (CQA).

Following an exploration of the literature to search for similar methodologies, it was clear that a Confirmatory Qualitative Analysis or similar model did not exist within qualitative research. Methods such as inductive research or inductive reasoning exist, which focus on generating new meaning from collected data to identify patterns and relationships towards building a theory (Thomas, 2006). These do not prevent the researcher from utilising other existing theory to further formulate a more robust research question to be explored (Saunders et al., 2012). In fact, Bendassolli (2013) encourages the researcher to contextualize their findings and encompass a

wider picture to make sense of data through comparing them with findings discussed in extant or relevant literature. However, despite these benefits, the method does not consider the application of confirming previously existing framework models. Novel approaches to analysing qualitative data have been adapted and used within the literature when building upon previous studies, which aim to provide a more robust theoretical interpretation (Patel et al., 2016). This is important considering the challenges of framework analysis in implementing models and how these are advanced in analysing qualitative data (Parkinson et al., 2015).

Applying Confirmatory Qualitative Analysis (CQA)

This method of data analysis offered a novel approach towards influencing and developing the framework model when compared with data collected from different groups of participants across different research sites. Data collected in stage three were transcribed into a word processing document for ease of reading. Colour codes from categories within sub-themes were compared against the new data to determine similarities and differences within current themes (Figure 9).

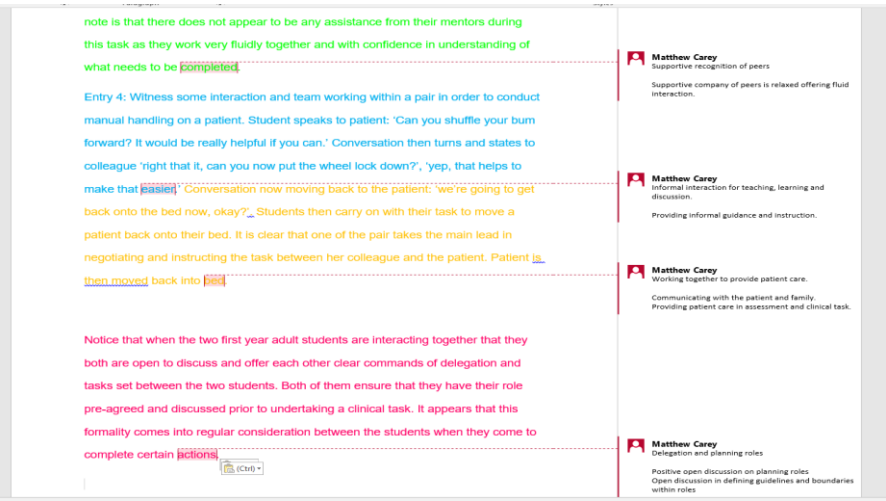

Figure 9: Extract from Confirmatory Qualitative Analysis of new data

A more detailed overview of themes and sub-themes has been presented in Appendix IX with examples of extracted data across all sites and stages of research within Phase two.

3.12 Phase three: meta-ethnography

The aim of Phase three of the study was to draw together and synthesise key findings from Phases one and two to develop a conceptual model for PAL. Exploration of the current literature revealed that no previous model for PAL in clinical practice existed. Considering the extent of work that had been completed within previous phases, this provided the opportunity for further qualitative synthesis of findings from the systematic review, and the observations with child and adult student nurse participants in the form of a meta-ethnography.

Meta-synthesis enables parts of research to be brought together to construct new concepts that are greater than the sum of its parts (Barnet-Page and Thomas, 2009). By using these building blocks the researcher is able to develop a greater understanding of the topic (Sanford et al., 2018). To achieve this, Phase three utilised meta-ethnography, based upon the work of Noblit and Hare (1988). The choice of method lends itself to the synthesis of a smaller group of papers and offer quality through a structured seven-step process (Noblit and Hare, 1988). The process has been evaluated as a successful tool in developing new concepts to build upon existing theory (Britten et al., 2002, Campbell et al., 2003).

Through this seven-step process, the main themes and sub-themes from Phases one and two were brought to together and synthesised resulting in the generation of new conceptual model for PAL. The newly developed conceptual model presents a structure outlining elements required for students to achieve knowledge and skills when engaging in PAL, which can be adopted into clinical practice. Further detail and full exploration of Phase three is provided in Chapter 6 as a published paper within the journal Nursing Open.

CHAPTER 4: AN EXPLORATION OF PEER-ASSISTED LEARNING IN UNDERGRADUATE NURSING STUDENTS IN PAEDIATRIC CLINICAL SETTINGS: AN ETHNOGRAPHIC STUDY (PHASE TWO)

In this chapter Phase two of the study is presented, the aim of which was conduct ethnographic non-participant observations exploring peer-assisted learning in undergraduate nursing students within the clinical practice setting. This was following the presentation and publication of the findings within the systematic review in Phase one, which made recommendations towards further ethnographic research to explore PAL. This chapter provides a more detailed report and analysis of PAL as evidenced by observations undertaken in paediatric care settings across the two NHS sites as part of stages one and two.

The bibliographical details of the work, a description of the work, and an estimated percentage of contribution (%) of each author are as follows: Carey, M.C. (85%) Chick, A. (5%) Kent, B. (5%) Latour, J.M. (5%). The percentages of contributions have been agreed among all authors.

MCC generated the initial idea, wrote the study protocol and obtained ethical approval of the study. MCC performed the observations and data collection. MCC performed the initial analysis and AC acted as the second coder through stages one to five within the framework analysis process. Interpretation of the themes through to

the discussion and recommendations were conducted by MCC. MCC drafted the first manuscript. All authors have contributed and agreed the final manuscript.

The chapter, presented as a paper was accepted for publication in the journal Nurse Education Today on 15th March 2018. It is the published work that is presented next.

An exploration of peer-assisted learning in undergraduate nursing students in paediatric clinical settings: An ethnographic study.

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4.1 Abstract

Background

Peer-assisted leaning relates to the acquisition of knowledge and skills through shared learning of matched equals. The concept has been explored within the field of nurse education across a range of learning environments, but its impact in practice is still relatively unknown. This paper reports on findings when observing paediatric undergraduate nursing students who engage in PAL within the clinical practice setting.

Objectives

The aim of this paper is to report the findings of a study undertaken to explore peer-assisted learning in undergraduate nursing students, studying children's health, in the clinical practice setting.

Design

A qualitative ethnographic study using non-participant observations.

Settings

A range of inpatient paediatric clinical settings across two teaching hospitals.

Participants

First, second and third year paediatric student nurses enrolled on a Bachelor of Nursing Programme.

Methods

Non-participant observations were used to observe a range of interactions between the participants when engaging in peer-assisted learning within the same clinical area. A total of 67 h of raw data collected across all observations was analysed using framework analysis to draw together key themes.

Results

Of the 20 identified students across two hospitals, 17 agreed to take part in the study. Findings were aggregated into three key themes; 1. Peers as facilitators to develop learning when engaging in peer-assisted learning, 2. Working together to develop clinical practice and deliver care, 3. Positive support and interaction from peers to enhance networking and develop working structure.

Conclusions

Peer-assisted learning in undergraduate children's nursing students stimulates students in becoming engaged in their learning experiences in clinical practice and enhance collaborative support within the working environment. The benefits of peer-assisted learning in current clinical practice settings can be challenging. Therefore, education and practice need to be aware of the benefits and their contribution towards future strategies and models of learning.

Highlights

- Paediatric student nurse peers act as informal facilitators to support the learning of their colleagues, through providing teaching, advice and guidance.
- Positive relationships exist between nursing student peers engaging in PAL to develop and shape their learning of clinical practice and providing patient care.
- Peer support is a vital element in clinical practice across all levels of learning leading to enhanced networking and aiding students to develop a clinical working structure.

4.2 Introduction

In recent years, more studies have begun to explore peer-centred learning methods to encourage student participation in education and promote critical thinking (Baeten et al., 2010). One such approach is peer-assisted learning (PAL), in which students acquire skills and knowledge through the active help provided by status equals or matched companions (Topping, 2005). The concept of PAL has been around for many years (Williams and Reddy, 2016); however, its advancement in nurse education has been affected by definition and lack of consistency (Secomb, 2008). There are many aspects of terminology that are associated with PAL, including ‘‘peer teaching’’ (Brannagan et al., 2013) ‘‘peer support’’ (Aston and Molassiotis, 2003) and ‘‘peer mentoring’’ (Li et al., 2010), which creates confusion.

Peer-assisted learning in the context of nurse education has been widely used within the simulated clinical skills environment, utilising junior and senior student nurses. Peer learning supported the acquisition of new clinical skills for junior students, whilst senior students consolidated teaching skills (Stables, 2012, Dumas et al., 2015). Increases in clinical knowledge and skills as well as clinical competence were seen by medical students within the context of clinical simulation (Seifert et al., 2016). Furthermore, PAL in undergraduate nursing education has resulted in enhancements in student's skills of communication, critical thinking and self-confidence particularly in theoretical settings (Christiansen and Jensen, 2008, Williams and Reddy, 2016).

Despite nursing students spending significant amounts of time learning in clinical settings, there appears to have been minimal exploration of PAL in the context of the clinical practice setting (Carey et al., 2016). Within the UK's Higher Education Institutes (HEIs) 50% of student learning takes place within the clinical practice environment, as outlined in standards for practice by the national Nursing and Midwifery Council (NMC, 2009). Currently, mentors who are registered nurses take on the role of supporting learning and assessing the competence of undergraduate nurses whilst in clinical practice (NMC, 2009, Casey and Clark, 2011). However, the perceptions of the quality of mentorship are variable as pressures on clinical workload limit the opportunities for students to work together with nurse mentors (Omansky, 2010, Kalischuk, 2013). At such times, undergraduate student nurses seek out each other for support (Carey et al., 2016). A report by the UK's Council of Deans of Health (2016) on educating the nurse of the future noted that students need to be equipped to teach others not just through mentorship, but informally in

the clinical environment. They determined that this recommendation should be explored within undergraduate education and acknowledged PAL as an area for consideration (Council of Deans of Health, 2016). Therefore, with the gaps identified in the evidence-base for exploring PAL in practice, the challenges of current mentorship systems and the pressures facing learners and clinicians in clinical practice, there was a need to explore the contribution of PAL within the clinical setting on student learning.

4.3 Objectives

The aim of this paper is to report the findings of a study undertaken to explore peer-assisted learning (PAL) in undergraduate nursing students, studying children's health, in paediatric clinical settings.

The objectives were:

- To explore the extent of learning development across different year groups of child health nursing students when engaging in PAL.
- To identify if PAL provides opportunities for optimising education in clinical practice.
- To identify the types of interactions that occurred as part of PAL in the clinical setting.

4.4 Methodology

The philosophical underpinning of the study were taken from of an interpretivist research paradigm, in which reality needs to be interpreted as it is seen by the subjective experiences of individuals (Guba and Lincoln, 1994). Within this paradigm, a qualitative ethnographic approach was utilised in order to explore the impact of PAL on students learning within the clinical setting across two sites. One of the main benefits of an ethnographic approach is that it encourages the researcher to enter the environment of the participant to watch, listen and collect data where it is available (LoBiondo-Wood and Haber, 2014). Non-participant observations were identified as the most appropriate method for answering the research questions.

Settings

The study was conducted in two different teaching hospitals located within one region, in England. PAL has been implemented among nursing students since 2014. The process of PAL starts within the theoretical setting linked to clinical skills facilitation in the simulated environment. In the clinical settings registered nurse mentors of the students have been regularly updated about the PAL during monthly mentor updates with university lecturers.

Ethics

This study formed part of a larger project exploring PAL on enhancing the learning of undergraduate student nurses across multiple fields of nursing across different sites. Ethics for both sites of the study was granted by the university's students ethics

committee and by the NHS. The study was conducted over two years between 2015 and 2016. Following ethical approval, students were given a participant information sheet outlining; the purpose of the study, its methods and how information would be kept confidential. Those agreeing to take part in the study met with the researcher within the practice environment to ask any further questions prior to obtaining written consent.

Sample selection

The students were purposefully selected from a range of first, second and third-year paediatric nursing students enrolled on a three-year undergraduate nursing degree programme, according their location and timing of placements across the two sites. Although the literature suggests PAL is provided amongst matched equals, in our study we defined matched equals as nursing students within the same programme and not by the same year of study. A sample size of 20 students were identified as having a placement across the two sites, with 17 agreeing to take part in the study. As the researcher was known to the participants, the students were approached by a third-party academic to avoid coercion and intimidation when seeking consent (Edens et al., 2011).

Data collection

Student participants were observed by the primary researcher over a period of two weeks at each site. Both sites included a range of paediatric inpatient environments according to student placement allocation. Interactions between groups of students

from all levels of study were recorded using audio recordings and field notes between periods of 1-5 hours within the working shift patterns of student nurses. Before starting data collection, the ward staff and managers made in-patients and their families aware of the study and the observations.

Data analysis

To promote anonymity, students were designated a code to represent their identity when collecting and referring to field notes. This was to ensure that no personal details were used as outlined within the participant information sheet. As a non-participant observer, the researcher was aware of the fact that they were known to the students. For this reason, the first hour of initial data recordings were not included within final analysis in consideration of the Hawthorne effect linked to participants observed (Sedgwick, 2012). It was noted that after this initial time students appeared to be less aware of the researcher and focused themselves upon engaging with their peers. Interestingly Monahan and Fisher (2010) argue that the performance of the participants, whether staged or influenced by the observer can often reveal profound truths about social and cultural phenomena.

Framework analysis was used to analyse the data, based upon the tool created by Ritchie and Spencer (1994). A defining feature of the framework methods through its step by step stages is to use a matrix output (rows and columns) of summarised data (codes) to provide a structure for the researcher to systematically reduce data for analysis by case and code (Ritchie et al., 2014). Normally associated with interviews, the principles for this method of data analysis can be utilised for other textual data

such as field notes and recorded data from observations (Gale et al., 2013). A seven step process was utilised to analyse over 35 hours of raw data to draw together key themes (Figure 3). These steps were undertaken by the primary researcher, with a second coder utilised to ensure systematicity, clarity and transparency when analysing data (Hall et al., 2005). Visitation of key stages were discussed between the researcher and second coder to develop and compare themes. These findings were developed into a working framework model that could be utilised to analyse the data from site two and synthesised into a more trustworthy framework model. At site two, another 32 hours of observations were collected. Within the findings, the student commentary are coded. For example [S1,StA,StC,W1]: S1 represent hospital 1 and S2 is hospital 2 where the observations took place; StA is a first year student, StB a second year student, and StC a third-year student; W1 is adolescent ward, W2 is acute paediatric ward; W3 is paediatric high dependency ward; W4 is paediatric assessment unit, and W5 is paediatric oncology ward.

4.5 Results

Data revealed three main themes contributing to impact of peer-assisted learning on enhancing the learning of undergraduate paediatric nurses. These themes were: peers as facilitators to develop learning when engaging in PAL, working together as peers to develop clinical practice and deliver care and finally, positive support and interaction from peers to enhance networking and develop working structure.

Peers as facilitators to develop learning when engaging in PAL

Theme one conveys the positive acknowledgement of peers acting as informal facilitators of learning towards their peer colleagues. These types of interactions occurred between student nurse peers across both sites when engaged in PAL. Observations recorded examples of opportunities that had the potential to optimise education amongst peers. These were demonstrated through systems of informal teaching support to offer advice and guidance to other peer colleagues. In one observation a third-year student nurse offers some teaching demonstration related to medication administration, discussing the formula for drug calculation and provides this to a group of three first years: *From my experience I find it easier to use the NHS [National Health Service-UK] example as it's easier to remember each part and relate this to the calculation*. This is further supported by: *I like the NHS method that some of our group use – what you Need, what you Have and what Solution. This one is easier to remember I think*. [S1,StA,StC,W1]. It is noted the value that the first-year student nurses gain through this demonstration: *This is great, thanks I think we give this one a go next.* [S1,StA,W1].

Peers across all level of study had an open policy of communication to ask questions and seek support to enhance their learning in the context of the clinical environment. Questioning enabled peer pairs to openly engage and confirm their understanding of various clinical tasks with their peer colleagues. In an observation a peer pair noted the importance of being able to seek assurance and guidance with their peer colleagues: *It can be really stressful sometimes, especially when it's busy. It helps to have someone else on hand to ask questions and if I need a bit of help with ward*

tasks. [S1,StA,W2]. This was further observed within most peer pairing who seemed to have limited restriction on the types of questions that were asked in relation to clinical practice.

Peers across both sites and within different years of study offered facilitation when discussing clinical competencies and how these related to clinical practice. As part of student development peer pairs were observed to plan and relate clinical and academic assessment assigned by the university, examples including; clinical examinations, creating development plans for practice and the implementation of clinical competencies set by the university. In an observation, two students take time out in the day for completing their development plans. They discuss what competencies they believe relates to practice and how they can relate this to their current placement: *Your domain for communication fits with all placements, but only certain skills can be completed in the acute areas. Like clinical observations, we could only do these here.* [S2,StC(x2),W3].

Working together to develop clinical practice and deliver care

Theme two considers the active and positive relationship between the student nurses across both sites as they engage in peer-assisted learning. The context of learning provides examples of where peer interactions shape the development of the students' own clinical practice. This was seen through examples of discussion, which related to determining best practice standards, but then applying this to the care of the patient. In one example, second year students working together as a peer pair challenge each other's knowledge regarding the expectations of giving antipyretics to

children and why they shouldn't be giving them to every child. They discuss the role of the student nurse in providing the parent with advice and guidance to ensure effective health promotion. Student's give practical examples of applying these situations to practice but relate these back to national guidelines to reinforce standards of care: *Guidelines, say only when it is high beyond 39 degrees C, you need the temperature there to fight infection, but all parents want their child to have Calpol without knowing why it's not needed. Yeh, you have to find out the reason why they need it before making the right decision to give it.* [S2,StB(x2),W4].

Students demonstrated learning and development, through positive PAL interaction, within clinical practice to plan and develop care for patients. Within one observation, a student pair take time to discuss the patient under their supervision to determine what needs to be prioritised and to be carried out as part of their ongoing care before instigating this. Within their pairings, students would often share in the learning experience of implementing and providing care for patients when engaging in PAL. In frequent observations across sites and different parings, students would undertake routine observations of patients in the bays and side cubicles. Prior to undertaking these tasks students would establish the role they would like to perform. Students were also accommodating to share out these roles to ensure that experiences were shared in turns: *I'm happy if you want to complete the obs and I'll write them down, but we can always swap later with the next one?* [S1,StA,StC,W1]. This approach was widely accepted by multiple pairs of students.

Between periods of implementing care, student nurses were observed and seen to share and relate their experiences of clinical practice to aid their understanding and develop their learning. In one example a third-year student working with a junior first year provides a direct identification of experience of when they had to take observations on a challenging patient: *The infant was distressed, which would raise their B.P. (blood pressure), so this wouldn't offer the best result to record.* [S1,StA,StC,W5]. This example led into a discussion about how these experiences can be shared to help learn from them and tips on how to develop your own practice as a student nurse. The senior student shares experiences of when it is not appropriate to approach a patient for observation if they are stressed and how you can encourage them in other ways: *You could distract them with a toy or something, then you can attempt to put the cuff on them when they are settled.* [S1,StA,StC,W5].

Positive support and interaction from peers to enhance networking and develop working structure

The focus of theme three centred on demonstrating the networking elements arising from peer interaction within the clinical environment. Peer support was seen as a vital element for students across participants at different levels of study and interaction. Students when engaging in PAL often used each other for navigating the clinical environment especially in the early stages of a new placement. In one observation a paring of two first year students discuss some of the challenges of finding their way around placement, especially when it is new. One student makes a point to note how they find it beneficial to have another student colleague around when working in a stressful clinical area: *It can be really stressful sometimes,*

especially when it's busy. It helps to have someone else on hand to ask some simple questions and if I need a bit of help with ward tasks. [S1,StA,W2]. This is a commonality, which was reciprocated by the other peer within the pair: *Yeah, you are right, I feel the same, it's nice to see a friendly face.* [S1,StA,W2].

The engagement of PAL by both junior and senior peers highlighted a culture whereby they would feel confident to openly discuss the structure of the clinical area and consider where they fit into this environment as student nurses. In early observations, students were seen to regularly discuss their approach towards the day-to-day tasks and the structure of working within the clinical area. Students, especially within pairings of first years were interested in the process of where they fit into this structure and how they adapt to these new placement experiences. In one observation, a peer pair who are new to the placement use the start of the day to consider the task ahead: *We always check the drugs charts first, then go see the patients. We can do this as students. Let's do that first then we can go through what we need to do next.* [S1,StA,W2].

Peers seemed to work well together in their pairings when engaging in PAL. The acceptance towards being part of a pair was seen through observing different groups and years of study across different sites. Students were open to the opinions of their peer colleagues when engaging in shared learning and networking, which in one observation appeared to be underpinned by mutual respect seen between two peers. This was demonstrated in the way that they stood alongside each other by the desk, engaged in a patients assessment paperwork and discussed/confirmed what it is that

they are have just completed. Both peers shared thoughts and interpretation of the information, giving each other opportunity to speak and share in their ideas before agreeing on the outcome: *The mum mentioned that they hadn't been feeding too well, do you agree with this? Yep, I see that you've recorded it here, but they are having wet nappies, which is good. Yeah, I agree.* [S2,StB,W4].

Networking also extended to opportunities for social interactions in which students could offload stress and seek emotional support from their peer colleagues. In one observation: students during a period of respite from clinical task entered into a conversation which enabled them to reflect on the benefits of working together and how they are able to use each other for emotional support: *It's good to have someone to chat with and have a moan, especially when you have a busy day. I know you are there if I need you and that takes some of the pressure off!* [S1,StA,W2].

4.6 Discussion

The findings presented in this paper capture benefits arising from engaging in peer-assisted learning within clinical practice. These include peers being informal facilitators to develop learning, as well as the provision of advice and guidance. This finding is supported by that of Walsh, who explored the effects of social interaction of mental health student nurses when in community placements (Walsh, 2015). Walsh also noted ad hoc situations of informal facilitation of learning whereby some students would provide teaching and show other peer colleagues how to do things when on placement.

Opportunities for optimising education in clinical practice appeared limited within the data, however, support was provided by peers through shared learning experiences. These opportunities were extended by peers from all level of study related to a variety of learning situations, but especially when providing patient care. In a systematic review, Davis et al. (2016) explored the influence of workplace culture on qualified nurses' learning experiences. They noted the importance of peer support in shared learning experiences to facilitate and encourage other peers to develop in their learning. They also reported that qualified nurses who did not have access to support from peers during unfamiliar tasks were likely to have limited learning outcomes compared to having the opportunity to participate in new activities supported by peers (Davis et al., 2016).

Using peers to support student learning in practice is a philosophy shared by a coaching strategy for undergraduate nursing students known as the Collaborative Learning in Practice (CLiP) model (Lobo et al., 2014). This model, developed in Amsterdam, is one in which student-led and peer learning is used to encourage students in their learning in clinical settings. Coaches, rather than mentors, used less telling and teaching, and more questioning, enquiry and prompting to encourage students to plan and assume responsibility for the care they provide (Lobo et al., 2014). Such behaviours were observed in this study and captured within theme two, whereby students of all levels of study had an open policy of communication and questioning and seek support to enhance their learning in the context of the clinical environment.

The opportunities for optimizing education, despite its limitation within the data, did note frequency in the support of peers to discuss and support each other in planning assessment competencies. This is a finding that is sparsely reported within the current nursing literature. One study related to PAL with medical students in the clinical setting supported the importance of PAL for exam focused learning among students (Bennett et al., 2015). Interestingly, multiple participants across the two site put large emphasis on bring up these topics as points of discussion and to utilize their peers in planning and negotiating appropriate clinical competencies for the placement environment. Despite limited links to the aims of the study, the acknowledgement of general discussion amongst peers related to planning competencies offers an area for further research, to indicate whether this support has influence on student education when implementing these in clinical practice.

The types of interactions between peers were varied and ad hoc. In an example from the data a senior student nurse used informal situations to teach their junior peer colleagues. Furthermore, junior student nurses offering their support across different levels of study, but particularly noted positive support from peers that then help navigate practice, especially in times of stress. This was also identified by Walsh (2015). When faced with stressful situations students found the emotional support of other peers valuable to talk to someone who understands (Walsh, 2015). The notion of peer support to develop some structure within the work environment appeared to be important early on within a new placement for some of the peers. This was also identified by Roberts (2008) who explored the importance of peers for learning in practice. For most of the students, they reported the company of peers to be

important within a new placement, sticking together and being able to swap experiences and anecdotes.

Limitations of the study

One limitation of the study focuses on the timing of the observations conducted. Following ethical approval, periods of observation were limited to when the students were allocated on placement. Therefore, students were purposely selected based upon the allocation and timing of these. This added some restriction to the numbers in Child Health nursing students due to the size and allocation of the placement environments. Another limitation is the restriction between the years of study of participants available for observation. In our study we defined matched equals as being a student nurse, regardless of the stage of study. Ideally the observations should have been conducted between students at the same stage of study. We also acknowledge the 65 hours of transcription as limited observation time for an ethnographic study. Finally, the study included mainly female participants with only one male participant. Further research is needed to identify gender differences when engaging in PAL.

4.7 Conclusion and recommendations

The benefits of peer-assisted learning are an important consideration for the future of both nurse education, also to consider that students have much to gain from one another when engaging in PAL in the clinical practice setting. It is clear that the learning, which students experience in the real world setting have many varied and complex challenges that they must face. Therefore, in light of recommendations for

educating the nurse of the future Higher Education Institutes and mentors/educators need to be aware of the benefits of PAL and how it contributes towards future strategies and models of learning. As this was a small qualitative study, future recommendations include the need to explore other fields of nursing to determine similarities and further influences of PAL amongst nursing students.

Conflicts of interest

The authors declare no conflict of interest.

Acknowledgements

This study was conducted as part of a larger PhD project funded by the School of Nursing and Midwifery, University of Plymouth.

CHAPTER 5: EXPLORING PAL AMONG ADULT NURSING STUDENTS IN ONE NHS TRUST (PHASE TWO)

This chapter continues the focus within Phase two of the study and presents detailed findings arising from stage three. As part of stage three, ethnographic observations were undertaken with student participants in the Adult field of nursing in site two. Data collected within stage three was analysed using Confirmatory Qualitative Analysis as indicated in the methods chapter. This chapter, provides a more detailed report and analysis of the findings when exploring PAL among adult nursing students.

The bibliographical details of the work, a description of the work, and an estimated percentage of contribution (%) of each author are as follows: Carey, M.C. (85%) Chick, A. (5%) Kent, B. (5%) Latour, J.M. (5%). The percentages of contributions have been agreed among all authors.

MCC generated the initial idea, wrote the study protocol and obtained ethical approval of the study. MCC performed the observations and data collection. MCC performed the initial analysis and AC acted as the second coder through stages one to five within the framework analysis process and confirmer during Confirmatory Qualitative Analysis. Interpretation of the themes through to the discussion and recommendations were conducted by MCC. MCC drafted the first manuscript. All authors have contributed and agreed the final manuscript. This chapter has been created as a research paper and submitted to a peer-reviewed journal.

‘An ethnographic study exploring the influence of peer-assisted learning among undergraduate adult student nurses in clinical practice.’

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This study was conducted as part of a larger PhD project funded by the School of Nursing and Midwifery, University of Plymouth.

5.1 Abstract

Peer-assisted learning is a concept that sees student nurses acquire knowledge and skills through the support provided by other peers. However, its advancement in nurse education is hindered by inconsistencies in definition. PAL has been considered in theoretical setting, but has limited exploration within clinical settings. The context of this paper reports on a study looking at the influence of PAL on the learning of student's studying adult nursing in the clinical practice setting. The design used ethnographic non-participant observations to observe a range of interactions between participants engaging in peer-assisted learning in the same clinical setting. Observational data analysed against an existing framework model to analysis 32 hours of raw data. to aggregate key themes: 1. Peers as facilitators to develop learning when engaging in PAL, 2. Working together to develop clinical practice and deliver care, 3. Positive support and interaction from peers to enhance networking and develop working structure. Findings noted how student nurses engaging in peer-assisted learning within the clinical practice setting have much to gain from one another. The associated benefits are an important consideration for educating the future nurse. Therefore, education and practice need to be aware of the benefits of PAL and how it contributes towards models and strategies of learning.

5.2 Introduction

Peer-assisted learning (PAL) is a concept that sees student nurses acquire knowledge and skills through the support provided by peers. Despite the concept being around for many years, the advancement in nurse education is hindered by

inconsistencies in its definition and structure (Secomb, 2008, Carey et al., 2018b). PAL has been associated with theoretical settings and has shown to enhance student skills of communication, critical thinking and building confidence (Christensen and Jensen, 2008, Daley et al., 2008). It has also been used in nursing education within the clinical skills environment to support the acquisition of new skills (Rothgeb, 2008). Despite its consideration in theoretical settings, there appears to be limited exploration of PAL within clinical practice (Carey et al., 2016). The context of this paper reports on a study looking at the influence of PAL among adult student nurses within the clinical practice setting.

5.3 Background

The goal of undergraduate nurse education is to create an environment that enables students to become nurses with both the knowledge and skills needed to deliver high quality care (Westin et al., 2015). It is the desire to develop student nurses as critical thinkers and to support decision-making, encouraging them to apply this across practice settings (Ozturk et al., 2008, Martyn et al., 2014). Historically, research exploring nurse education has focused upon traditional methods of how students learn knowledge and skills within the academic environment (Iwasiw et al., 2009). Largely, within the United Kingdom, traditional methods have centred upon a behaviourist pedagogical approach, whereby learning is content driven, led by teachers (Macintosh-Franklin, 2016). These methods appear to emphasise a passive approach to learning to achieve the required knowledge, with the teacher determining what constitutes as knowledge (Iwasiw et al., 2009, Macintosh-Franklin,

2016). A criticism of a behaviourist paradigm is its view of control, which sees the learner as a passive recipient of knowledge. The method ignores the importance of human relationships and the social context of how students learning from one another (Quinn, 2013). Therefore, such methods have been challenged to consider alternative paradigms (Hockings, 2009).

In more recent years, studies exploring concepts of peer-centred learning are emerging, which focus upon student participation in the learning process and encourage critical thinking (Parkin, 2006, Baeten et al., 2010). Such methods derive from constructivist educational paradigms, which according to Vygotsky focus not upon mechanical learning to achieve knowledge but constructing it within the offerings of the learning environment (Liu and Matthews, 2005). The leaner makes sense of new information by building upon what they already know from previous experience. In nurse education, the aim is to capitalize on this experience to involve the student in the learning process (Hunter and Krantz, 2010, Aliakbari et al., 2015). One specific construct within this paradigm is social constructivism, whereby learners assemble knowledge through social interaction with others (Burr, 2003). Influences on learning may be provided through the support and facilitation of shared experience, which could be through an educator (Hunter and Kranz, 2010). These types of partnerships through peer-centred approaches have shown to encourage the attainment of knowledge and skills of undergraduate student nurses (Dumchin, 2010).

One peer-centred learning approach is peer-assisted learning (PAL), which is defined as the acquisition of knowledge and skills through the active support of status equals or matched companions (Topping, 2005). This is a concept promoting a learn-by-doing attitude to encourage shared experience and teaching to achieve learning (Topping and Ehly, 1998). The concept of PAL dates back to the era of Socrates and Plato whom when reclining in social circles would share, question and challenge each other's ideas (Topping and Ehly, 1998), a feature requisite of social constructivism (Thomas et al., 2014). Despite, the long history of PAL, it creates confusion in nursing education to its interchangeable terminology and lack of consistence (Secomb, 2008).

Peer-assisted learning as a model within theoretical settings has shown to enhance student nurse skills of communication, critical thinking and developing confidence (Christensen and Jensen, 2008, Daley et al., 2008). Wider use of PAL has been associated with the clinical skills and simulated environment, which has focus on acquisition of knowledge linked to specific skills (Rickets, 2011, Stables, 2012). The simulated setting appears to create a more prominent environment for active involvement and facilitating support amongst peers to achieve these goals (Rothgeb, 2008).

Within the UK HEIs, 50% of student learning takes place within clinical practice (NMC, 2009). Despite the acknowledgement of PAL within theoretical settings, up to this point there had been limited exploration within the context of clinical practice settings (Carey et al., 2016). Current standards for supporting and assessing student

learning is the responsibility of registered nurse mentors, however, recent perceptions of quality and an increasing workload have challenged the effectiveness of mentorship and limited students time spent with mentors (Lloyd-Jones et al., 2001, Hurley et al., 2008). In place of this, students have been noted to seek each other out for support (Roberts, 2008, Roberts, 2009). Recent reports into the quality of care for patients acknowledge the challenges of current practice learning and call for a review of current mentorship models and standards (Lord Willis, 2015). In support of this, the Council of Deans for Health (2016) recommended PAL as an area for consideration when educating the future student nurse beyond the provision of mentorship alone. This prompted Carey et al. (2018a) to explore PAL among nursing students from the field of child health in clinical practice. They determined that students had much to gain from one another when engaging in PAL and further recommended that other fields of nursing be explored to determine similarities and further influences of PAL (Carey et al., 2018a). In light of limited and new emerging evidence and the pressures faced by both leaners and clinicians in practice, there was need to further explore the contribution of PAL to student learning when in clinical practice.

5.4 Objectives

The aim of this study was to explore peer-assisted learning in undergraduate student nurses studying adult nursing within the clinical practice setting.

More specifically the objectives were:

- To explore the opportunities for learning development across different year groups of adult student nursing students when engaging in PAL.
- To identify if PAL provides opportunities for augmenting student education in clinical practice.
- To identify the types of interactions occurring amongst student nurses when engaging in PAL.

5.5 Methodology

A qualitative ethnographic approach was utilised to explore PAL on student learning within the clinical setting in a university teaching hospital. The key features of ethnography focus upon culture and context (Shultz, 1996). The aim of exploring culture is to understand the people that are being studied and that their activities need to be observed with the context of the natural setting (Hammersley and Atkinson, 2007). To achieve this the researcher enters into the participants' environment to observe and collect data where it is available (LoBiondo-Wood and Haber, 2014). Non-participant observations were identified as the most appropriate method to achieve the objectives of the study.

Setting

The setting where the observations took place across two inpatient acute wards within a teaching hospital linked to the University of Plymouth. Peer-assisted learning had been implemented among nursing student since 2014 within the chosen setting. Much of the learning implemented within theoretical setting is linked to clinical skills

facilitation within the simulated environment. Within the clinical setting registered nurse mentors of nursing students are updated regularly regarding PAL within mentor updates delivered by lecturers based at the university.

Ethics

This study formed part of a larger project, which explored the influence of PAL on the learning of undergraduate student nurses across multiple fields of nursing and across different teaching hospitals within the UK. Ethical approval for both child health and adult nursing fields as well as clinical settings was sought and approved by the university ethics committee and the National Health Service (NHS, IRAS: 187233). Following approval from the ethics committees, identified participants were given a participant information sheet, which outlines the aim of the study, its methods and how collected information would be kept confidential. Student nurses who agreed to take part in the study met with the researcher within the clinical environment to discuss any questions they may have prior to obtaining written consent.

Sample selection

Purposive sampling was used to identify adult student nurses based upon their placement allocation within the chosen teaching hospital. All students were registered upon the same undergraduate degree programme but were selected from different years of study across a three-year undergraduate teaching programme. Within the literature PAL was suggested as active support from status equals or matched companions. Within the study, we defined matches equals as nursing

students within the same programme and not by the same year of study. A total of 12 students were invited to participate in the study with seven agreeing to take part (Table 7). Three students were in their first year of study, two in their second and two in their final year. The three first year student nurses and one third year student nurse were on one inpatient acute ward. The remaining two-second year student nurses and one third year student nurse were located on another similar inpatient ward. The primary researcher conducting the observations was a lecturer in the university, but within a separate field of nursing, therefore, they were not known to the participants. However, in order to avoid coercion and intimidation participants were approach by a third party to seek consent (Edens et al., 2011).

Table 7: characteristics of study participants, adult nursing

Study participant	Gender	Age	First-year student	Second-year student	Third-year Student
1	Female	20	X		
2	Female	21		X	
3	Female	20	X		
4	Female	26	X		
5	Female	36		X	
6	Female	22			X
7	Female	24			X

Data collection

The participants were observed by the primary researcher over a period of two weeks between June-July 2017 according to student placement allocation. Students were allocated to peers depending on their shift patterns. Audio recordings and field notes were used to record observations and commentary during conversations

between the student peer pairs from all years of study. Before the observations were undertaken, clinical staff and managers made the inpatients and their families aware of the study and the observations. No consent of patient and families was requested because no patient data was collected during the observations. Periods of observation ranged between 1-5 hours within the working shift patterns of the student nurses. A total of 32 hours of raw data was collected across the observations.

Data analysis

To maintain anonymity, the student nurse participants were provided with a code to represent their identity when collecting and referring to field notes. The importance of this action was to ensure that no personal details were recorded as outlined within the participant information sheet. The initial first hour of recorded data was not included within the final analysis. This was in consideration of the Hawthorne effect, whereby participants during early observations may alter their behaviour if they are aware of the presence of the researcher (Sedgwick, 2012). Interestingly, it was noted during the study that participants after the initial observations appears to be less aware of the presence of the researcher, instead focusing upon engaging with their peers.

Data analysis was informed by the findings from an earlier phase of the research, which led to the development of a framework model (see Figure 8), based on Ritchie and Spencer's (1994) framework analysis approach. This structured model was used as a comparator for analysis purposes, when observing the student nurses studying

adult nurses. Codes from categories within sub-themes were compared against the new data to identify similarities and differences within the emergent themes. This method of data analysis offered a novel approach towards influencing and developing the framework model when compared with data collected from different groups of participants across different research sites. Novel approaches to analysing qualitative data have been adapted and used within the literature when building upon previous studies, which aim to provide a more robust theoretical interpretation (Patel et al., 2016). This is important, particularly when one considers the challenges of framework analysis in implementing models and how these are advanced in analysing qualitative data (Parkinson et al., 2015). Data were analysed by two people to enhance rigour and transparency (Hall et al., 2005). Discussions between the researcher and second coder followed analysis, allowed comparisons to be made between the new data and the previous codes and themes. These were further discussed with the wider research team to consider any discrepancies and disagreements that arose.

5.6 Results

Findings arising from the data generated by the present phase of the research were compared with the existing framework model. The combined results created a number of themes that are presented next.

These themes were: peers as facilitators to develop learning when engaging in PAL, working together as peers to develop clinical practice and deliver care and finally, positive support and interaction from peers to enhance networking and develop

working structure. Within the findings, student commentary has been coded. For example [StA, StB, W1]: StA represents a first-year student nurse, StB a second-year student and StC a third-year student; W1 is orthopaedic ward one, W2 is orthopaedic ward two.

Peers as facilitators to develop learning when engaging in PAL

Theme one noted the positive influence of peers who acted as informal facilitators of learning towards peer colleagues. Within these interactions adult student nurses when engaging in PAL had an open mind and a willingness to support their peer colleagues. This often became as part of the day-to-day clinical routine, centred toward task-orientated topics. In one observation, student peers were observed to provide their colleagues with instruction and guidance for completing a manual handling task: *You have to lift his legs. You then have to put that blue bit underneath his legs and then that bit wraps around here and then the two blue bits go through each other* [StC,W2]. The instructed peer is able to understand enough of what their colleague is saying in order to complete the instructions effectively: *So I put this bit around here and then I can connect it to the hoist. I think I've got it* [StB,W2]. This task is complimented with some demonstration, which is offered by the guider on how to complete the task described: *that's it, now I'll show you some more tips that helps me to do it* [StC,W2].

As facilitators of learning peers took a positive approach towards delegating and planning roles within task allocation. This was observed between senior and junior

peer parings; however, it was also noted how students at the same level of study would positively engage within these roles. In one observation a first-year student nurse was observed to openly discuss the task and offer clear commands of delegation to their colleague: *Are you happy to do the obs and I will help? If you start with the pulse and resps and I'm happy to do the rest. We can then record them together* [StA,W1] Both students ensure that they have their role pre-agreed and discussed prior to undertaking a clinical task and discuss the boundaries: *I'm happy with that, if I do my observations first then you can do your bit. We can discuss the results and then write them down* [StA,W2].

As facilitators of learning, observations were recorded in relation to discussion and support provided by student peers in relation to clinical and academic assessment. In one observation a first-year peers was seen to seek advice from a third-year student peer on how to manage and plan competencies in relation to assessment when in placement: *I wanted to ask which of these you think would be achievable on this placement and the best way to go about this?* [StA,W2]. The third year student describes some of the work that she needs to achieved today in order to meet these competencies: *We are going to be attempting some of these obs and clinical tasks today, so we may be able to use these to complete some of the competencies* [StC,W2]. There is some open discussion between the two students whereby the senior student offers to share examples within her own competencies as to how to approach this: *it might be helpful for you to see some of my examples and happy to share experiences. You can take note of how I have approaching these competencies and we can discuss how to plan to achieve them* [StC,W2].

Students engaging in PAL were also able to relate clinical examinations to the practice environment. In one observation, a first-year student peer pair are going through some practical recording of blood pressure following a patient assessment. One student makes reference to how a recent assessment has helped them to apply their learning to this task and actively shows their colleague: *We went through the differences in systolic and diastolic and checked the norm, the exam helped to prepare me for doing this on the ward and recording it correctly, see* (shows peer colleague) [StA,W1].

Working together as peers to develop clinical practice and deliver care

There was a clear clinical focus related to developing practice and delivering care to patients. The context for learning when adult student nurses engaged in PAL, demonstrated examples in theme two of how peer interactions shaped the developed of the students' own knowledge in relation to practice. This was often seen through discussion related to best practice standards. In one observation, a junior peer appears to be consciously aware of restraint within practice and how this related to patients with mental health needs in practice: *Many of the patients we have on the ward have altered mental state, which means we have to restrain them and it's hard to know what we need to be aware of before meeting a new patient* [StA,W1]. The third-year student nurse openly discussed the principles related to restraint and what they needed to consider in relation to maintain these standards: Most of the restraint here can be physical. *We often need to check who has attended physical training before using restraint, ask questions like; is a bed rail in place? Are they mildly aggressive and any factors that may add to this* [StC,W1].

Through observation it was noted the emphasis on provision of support from peers, across all years of study when undertaking observations and clinical task. These were frequent observations that appears to be the part of the normal routine within peer pairs when delivering care to patient. In one observation, A third-year student nurse takes their first year peer aside and consulting their inpatient hand over sheet reviews the clinical tasks set for the morning: *Right, these patient highlighted here need obs completing and some cares. We can start with bay (x) and work our way along and do the obs. If you start with these then lets meet in the middle and discuss any issue you had* [StC,W2].

Within peer pairings students were seen to have regular contact with the patient, whereby peers would work together to provide care. Discussion for planning and providing patient care was a joint effort between peers who would formulate decisions that were made together to establish a plan of action: *If we go to Mrs (x) first and help her onto the commode* [StA,W1]. *I'm happy to go get it and then we move her together?* [StA,W1]. Once the roles had been established and the task undertaken by the pair, the two students discussed the next part of the task to establish when they need to next intervene: *Do you think we should go with 10 minutes or half an hour? hmm, we could go with… if we try 10 minutes and then check to see how they are doing* [StA,W1]. *10 minutes makes sense, half an hour could be bit of a danger…yeah* [StA,W1].

Positive support and interaction from peers to enhance networking and develop working structure

The importance of peers establishing support within the infrastructure of the clinical environment was clear within the observations with the adult student nurses. Peers utilized each other when navigate the clinical area. In one observation, a peer pair were seen to actively allocate themselves with one another at the start of the shift without prompting from mentors. This was seen by peers of equal standing, and in incidence instigated by a more senior peer: *Why don't we take a bay together and that way we can work together and help each other out? If we start together earlier, then I we can help each other with patient washed, that would be good won't it* [StC,W2]. This is agreed with their colleague: *Yeh, that would be great, thanks* [StB,W2].

The students' ability to recognise the importance of peer support was clear. Support provided was relaxed, offering fluid interaction between peer pairs and groups from all levels of study. The adult student nurses appeared to have a mutual respect for one another, bonded by a commonality and friendships. In one observation two second year student nurses and a third-year student nurse are chatting at the nurses station and note the value of having the opportunity to work alongside their peers: *It's great having another student nurse to support you in your learning, but also to help when jobs when it's really busy. I don't feel afraid to ask you guys if I need a hand* [StB,W2].

The context in how peers interact noted the availability of peers from across different years of study. This enabled a wider interaction with other colleagues. If one particular peer was unavailable, then another peer was sought for their support. In one observation a second-year student nurse approaches a third year student nurse to ask for some help. As they are busy the second-year approaches another second-year peer colleague: *Do you mind if I ask you to help with completing this assessment?* [StB,W2]. *Yes, of course. What do want me to do?* [StB,W2].

Peer interactions was also seen within the social context. Peers, through shared understanding of their role would seek each other out to take their breaks together and share respite with their peer colleagues. In one paring between a first and third year student, the two discuss the need to take a break and agree to take this together: *Let's finish writing this up in the patients notes and go to the staff room to get a drink* [StC,W1].

5.7 Discussion

In discussion of the key findings, it was noted within themes how students acted as informal facilitators to support the learning of peer colleagues when working together. Peers had a positive approach towards giving and receiving instructions. Examples of two-way partnerships to offer advice, guidance and support was noted by Giodana and Wedin (2010), whereby student nurse peers acknowledged the positive influences of peer colleagues in providing them with reassurance, support and guidance. Facilitation of learning amongst the adult student nurses was often part of the daily routine in clinical practice and task-orientated for completing certain

skills, such as manual handling. This positive approach towards completing clinical task when engaging in PAL was also captured by Austria et al. (2013), who explored the collaborative learning of student nurse dyads, noted enhancements of practical learning and task-based skills within the facilitation of senior peers. These tasks were also largely related to providing care to patients as noted in theme two whereby peers worked together to deliver care.

Positive approaches and response towards delegation and planning roles was a key part of peers acting as facilitators of learning, which were observed as ad hoc interactions across all levels of study. Interestingly previous studies had noted the challenges in roles between peers, which were often poorly defined, especially in relation to task allocation (Austria et al., 2013, Ravanipour et al., 2015). Senior peers were reported to express authority and want to take on the majority of work for personal gains in learning rather than offer facilitate a shared experience (Austria et al., 2013, Ravanipour et al., 2015). It appeared that these types of interactions, occurring between adult student nurses, were largely positive. Furthermore, peers, regardless of their year of study were seen to seek each other out to encourage shared experience.

Opportunities for augmenting education was difficult to capture within the data. However, support of learning saw new aspects of data, which expressed the support and discussion amongst adult student nurses in discussing competencies linked to practice assessment. This is relatively new finding in relation to the wider literature; however, one study, linked to medical students noted the importance of PAL in

supporting the learning in relation to exams as a form of assessment (Bennett et al., 2015). Interestingly, the adult student nurses' utilised quieter periods to discuss these topics but were also observed to discuss how practice competencies and clinical examination outcomes related to the clinical practice environment.

Identifying the types of interactions amongst peers was further noted within theme three, which considered peer support beneficial in enhancing networking of students and developing a working structure. Peers utilized each other for navigating and participating in clinical practice. They had a free unrestricted access to each other for queries and support and this extended to the social context. Roberts (2008) highlighted the importance of peers in relation to socialisation practice and noted how peers would stick together and form communities that swap experiences and anecdotes when in placement regardless of the timing of the placement. From observation, it appeared within all types of interactions that the extent of learning was not restricted to one particular pair or level of learning, but a shared experience open to all. In previous participant groups, student nurses studying child health nursing were observed and seen to share and relate practice experiences to aid understanding and learning (Carey et al., 2018a). However, this did not present itself within the group of nurses studying adult nursing where there was more focus upon PAL in support of clinical task and providing patient care, which has been seen in previous study (Austria et al., 2013).

Implications for practice and learning

Managers and qualified nursing staff need to be made aware of positive influences that student nurse peers have on each other's learning when engaging in PAL. Peer-assisted learning should be encouraged in clinical practice to enable students to benefit from these opportunities on their learning and in enhancing networking with their peer colleagues. Peer-assisted learning needs further exploration to develop a working model that can be implemented within practice and provide structure to both student nurses and clinical staff.

Limitations of the study

Following ethical approval, participants were purposely selected according to the next available placement allocations. This added restriction to the timing and number of students that were identified to the clinical practice environment. This also added to restriction to the year of study of the participants. In our study, students were represented across all three years, however, peer were often linked to the same peer limiting the variety. A final limitation is that all participants were female. We would recommend that further research is needed to identify gender differences when engaging in PAL. The study also acknowledges that the findings based upon observations of seven students in 32 hours cannot be generalized.

5.8 Conclusion

The learning, which student nurses experience and must face within the real-world clinical settings are both varied and complex. Student nurses' response to engaging in peer-assisted learning within clinical practice settings is positive. Student nurses

offer support and guidance to their peer colleagues and encourage each other in their learning when undertaking clinical tasks. They work well within the structure of PAL to delegate and plan their roles. The opportunities for augmenting learning was difficult to capture, however, students engaging in PAL see benefits in offering each other academic support in relation to assessment as part of this role. Interactions of PAL is further supported by socialisation practice, which appears to enhance their networking in clinical practice. The associated benefits are an important consideration for educating future nurses and further support the recommendations put forward by Higher Education Institutes. It is therefore important for these institutes as well as mentor and clinical education to be aware of the benefits of PAL and how it contributes towards models and strategies of learning.

Conflicts of interest

The authors declare no conflict of interest.

CHAPTER 6: META-ETHNOGRAPHY AND DEVELOPMENT OF A PAL CONCEPTUAL MODEL (PHASE THREE)

In this chapter Phase three of the study is presented, the aim of which was to conduct and draw together through meta-analysis the data of the previous two phases. Exploration of the current literature revealed that no previous model for PAL in clinical practice existed. Considering the extent of work that had been completed within previous phases, Phase three provided the opportunity through the use of meta-ethnography, for further qualitative synthesis of findings presented within the systematic review in Phase one, and the ethnographic observations of participant groups within Phase two.

The bibliographical details of the work, a description of the work, and an estimated percentage of contribution (%) of each author are as follows: Carey, M.C. (90%) Kent, B. (5%) Latour, J.M. (5%). The percentages of contributions have been agreed by all authors.

MCC generated the initial idea and selected the chosen methods for meta-synthesis. MCC conducted the synthesis and was responsible for the generation of the themes and creation of the conceptual model, through to the discussion and recommendations. MCC drafted the first manuscript. All authors have contributed and agreed the final manuscript. The chapter, presented as a paper was accepted for publication in the journal Nursing Open on 12th November 2018. It is the published work that is presented next.

Using meta-ethnography to develop a conceptual model of peer-assisted learning for undergraduate nurses in clinical practice.

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The corresponding author and co-authors confirm that there are no conflicts of interest.

6.1 Abstract:

Aim

The study presents the findings of a meta-ethnographic study, developing a conceptual model for peer-assisted learning for undergraduate nurses in clinical practice.

Design

Qualitative meta-ethnography.

Methods

Meta-ethnography was used to synthesise findings of two ethnographic studies and a qualitative review related to the influence of peer-assisted learning on student nurses in clinical practice.

Results

Four key themes were identified underpinned by six sub-themes:
1) ‘Social’ whereby ‘connecting with peers’ is an important part in peer-assisted learning. 2) ‘Enabling’ peers through ‘collaborative support for advice and guidance’ and ‘reducing anxiety/increasing confidence.’ 3) ‘Organisational’ aspects within peer-assisted learning in ‘establishing structure and navigating practice’ and ‘establishing the role of the PAL.’ 4) ‘Learning’ as a product of developing knowledge and skills through ‘sharing of practice experience’ and ‘enhancing knowledge of care.’ The conceptual model presents a bold structure outlining elements required for developing effective knowledge and skills through peer-assisted learning.

Key words:

Peer-assisted learning, undergraduate nursing, clinical practice, nurse education

6.2. Introduction

Peer-assisted learning (PAL) is an initiative whereby students acquire knowledge and skills through the support provided by matched or status equals (Topping, 2005). The exploration of PAL amongst nursing students in clinical settings by Carey et al. (2018a) determined the consideration of matched equals to include student nurses across all years within a programme of study. Evidence of the use of PAL in nursing has been captured within both theoretical and simulated environments (Williams and Reddy, 2016, Dumas et al., 2015). However, the exploration of PAL within clinical practice settings is limited (Carey et al., 2016). Furthermore, the advancement of PAL in nurse education has been hindered by its lack of definition and consistency of structure (Secomb, 2008, Carey et al., 2018a).

6.3 Background

In a recent systematic review, Carey et al. (2018b) explored the experiences of nursing students engaging in PAL within clinical practice. They determined that student participation in PAL existed in both formal and informal circumstances. Synthesis of the most recent evidence supported the belief that engagement in PAL is beneficial, in terms of shared experience and learning, for developing clinical knowledge and skills. Furthermore, PAL helps in the forming of community, thereby reducing anxiety and increasing student confidence (Carey et al., 2018b). Recommendations from the review encouraged further exploration of the experience

and influence of PAL amongst student nurses in clinical practice. A recent study exploring PAL in clinical settings found that there were further benefits arising from the shared learning experience and through navigating clinical practice (Carey et al., 2018a). The authors concluded that nursing students had much to gain from one another when engaging in PAL and therefore it was important to determine the current structures in place to support how PAL is implemented in clinical practice.

The evidence indicates that models for supporting student learning through PAL are limited. Christiansen and Bell (2010), in their exploration of peer learning partnerships, referred to a learning initiative developed within a university in the United Kingdom (UK), but offered no depth of discussion in relation to structure and functionality. Furthermore, the emphasis within the results of the study was upon developing relationships, noting factors such as emotional support, gaining acceptance and contributions towards supportive learning relationships (Christiansen and Bell, 2010). This was a feature presented by Roberts (2008, 2009), who highlighted that relationship and socialisation practices were identified as potential keys to forming communities for the success of peer learning in practice.

A more recent model in development is the Collaborative Learning in Practice (CLiP) model (Lobo et al., 2014). The CLiP model, developed in Amsterdam and adopted by Norfolk and Norwich University Hospitals within the UK National Health Service, utilises the coaching method rather than traditional mentoring (Lobo et al., 2014). This model aims to challenge student knowledge, to encourage critical thinking and acquisition of skills, through the support of a staff nurse or practice educator (Taylor

and Callow, 2017). Within the model, students from all levels of study are allocated to the same clinical area, supported by the coach (Lobo et al., 2014). In some circumstances the coach could also be another student who engages in shared learning with other students to support and learn from each other (Huggins, 2016).

A definition of coaching in nursing is a collaborative relationship between a coach and willing individual using conversation to help the individual achieve their goal (Donner, 2009). The role of the coach is not one of giving advice or teaching and does not offer direction. Instead, a coach acts to support and encourage the individual through the presented experiences (Donner, 2009). This differs from the ethos of PAL, giving evidence towards the shared learning and support of others to gain knowledge and skills (Topping, 2005).

In consideration of model for supporting learning, the UK Council of Deans of Health (2016) acknowledged PAL as an area for consideration when educating the nurses of the future to equip them to teach others, not just through mentorship, but also, informally, in the clinical environment. Considering these recommendations and the benefits of PAL it was clear that further synthesis of the available data was required to determine whether a conceptual model of PAL could be created. Therefore, this paper reports the outcomes of the meta-ethnography undertaken to synthesise the available evidence exploring the influence of peer-assisted learning on student nurses, when in clinical practice, to formalise a conceptual model for peer-assisted learning.

6.4 Methods

Design

A synthesis of the best available evidence was undertaken using meta-ethnography to formalise a conceptual model for PAL. The meta-ethnography used the findings of two observational studies, of which one was published (Carey et al., 2018a), and the findings of a systematic review of qualitative studies. The review utilised a detailed search strategy to identify and potentially include international literature, however, this found a paucity of papers related to PAL in clinical practice (Carey et al., 2018b). An additional updated search in May 2018 for both UK and international papers did not find any new literature for inclusion. Ethical approval of the observational studies was obtained from the university ethics committee and the National Health Service (NHS, IRAS: 187233).

The synthesis of qualitative research is a concept that has been slowly gaining momentum in the area of healthcare (Dixon-Woods et al., 2005). However, challenges are presented in the form of choosing the best method for synthesising qualitative studies. Terms such as meta-analysis are often used to describe how quantitative research is synthesised. However, Barnet-Page and Thomas (2009) noted that synthesis of qualitative data is more complex due to multiple associated terms and concepts that can be applied. One of these methods is meta-ethnography, based on the influential work of Noblit and Hare (1988), to provide one alternative to meta-analysis. The principle notion of this method fits with the aims of synthesis, whereby parts of research are brought together to construct a whole, which is greater than the sum of its parts (Barnet-Page and Thomas, 2009).

The success of Noblit and Hare's synthesis was based upon small groups, within two to six papers, of closely related studies, a similarity fitting within the context of the chosen larger project and its publications. However, the rationale for this choice of method compared with other examples of qualitative synthesis was the quality of the seven-step process created for conducting meta-ethnography (Noblit and Hare, 1988). Previous studies had evaluated the tool with claimed success in its ability to provide new conceptual development to build upon existing theories (Britten et al., 2002, Campbell et al., 2003). The process also aided the development of models that interpret findings and reinterpret meaning across multiple studies (Atkins et al., 2008). Furthermore, the method was reported to be beneficial in identifying gaps that needed further research (Britten et al., 2002, Campbell et al., 2003).

Other considerations given to models for synthesising qualitative research, included framework synthesis, derived from framework analysis (Ritchie and Spencer, 1994). This method offers a structured and rigorous approach to organising and analysing large amounts of observations and field notes (Gale et al., 2013). The derivative of this is based upon the same principle but applied across multiple studies (Barnett-Page and Thomas, 2009). However, the basis of the synthesis for this project took into account a smaller collection of chosen studies and a systematic review that had already gone through a comprehensive synthesis process using framework analysis (Carey et al., 2018a). This created a working framework, but also presented themes along with those as expressed within the systematic review, which were analysed using a qualitative data synthesis tool (Carey et al., 2018b).

Seven-step process

The seven-step process (Table 8) was used as the designated tool for conducting the secondary synthesis of a systematic review and two observational studies exploring PAL amongst undergraduate nurses in the fields of child health and adult nursing. Stage one (getting started) focuses on 'finding something that is worthy of the synthesis effort' (Nobit and Hare, 1988, pg. 27). As the topic was already the focus of the project this remained unchanged. Stage two implores the researcher to decide what is relevant to the initial interest, noting the process of conducting a systematic search, screening and appraising of all potential studies relevant to the synthesis. Following the implementation of a recent systematic review (Carey et al., 2018b), along with associated projects within the more recent observational studies, it was argued that all necessary studies had been identified for this stage.

Table 8: Noblit and Hare's (1988) seven-step process for conducting meta-ethnography:

1. getting started
2. deciding what is relevant to the initial interest
3. reading the studies
4. determining how the studies are related
5. translating the studies into one another
6. synthesising translations
7. expressing the synthesis

Stage three, encouraged reading and rereading the chosen studies ensuring that attention was paid to the details in the accounts (Noblit and Hare, 1988). This stage was helpful as it enabled the researchers to re-familiarise themselves with the elements of the larger study, which led into stage four to determine how these studies are related to each other. Stage four identified and described metaphors, concepts or themes within each of the studies and compare them against each

other. It was noted by Toye et al. (2013) that this process is fundamental to meta-ethnography due to the concepts forming the raw data of the synthesis, but they highlighted the difficulties in deciphering concepts through their description. Other authors argued the challenges of interpretation to determine the distinction between findings and concepts when comparing data (Campbell et al., 2011). Toye et al. (2013), within their analysis of meta-ethnography, discussed how these concepts can be broken down into an order of constructs. First-order constructs depict the participant's interpretation in their own words, whereby second-order constructs relate to interpretations of the researcher based upon the data. First-order constructs often only present a limited amount of original data, which in previous attempts has created difficulties to distinguish between first and second-order constructs and utilise these within the process (Smith and Anderson, 2018). Therefore, the aim of meta-ethnography focuses upon the data within second-order constructs to synthesise and develop the researcher's interpretation of the original interpretations, or third-order constructs (Britten, 2002). Within this stage, second order concepts were considered to develop some initial interpretation.

As part of stage five, the presented key findings, which were made up of sub-themes and key categories, were respectfully chosen as second-order constructs from the collective projects and translated according to interpretations by the primary researcher (Table 9). A recent study had adopted a similar approach to identifying and utilising key themes as their second-order constructs to determine common and recurring themes (Strandås and Bondas, 2017). This stage involved exploring how these second-order constructs were related through comparison. Toye et al. (2013)

stated that constant comparing of these constructs enables the researcher to see similarities and differences between them and further create conceptual categories with shared meaning.

Table 9: Stage five, extract from translating studies into one another

Secondary construct	**Concepts and translations**
Complex choices when sharing learning opportunities	• Undefined roles • Role planning • Organisation
Delegation and planning roles	• Clearly defined roles • Role planning • Organisation
Discussion linked to best practice standards	• Standards of practice • Developing knowledge • Learning • Shared experience
Collaboration with nurse mentors	• Confirming understanding • Seeking guidance
Working together to provide patient care	• Support in providing care • Shared experience • Developing skills • Developing knowledge • Learning
Increasing confidence/reducing anxiety	• Decrease stress • Reducing anxiety • Enabling • Improving self confidence
Supportive recognition of peers	• Reducing anxiety • Enabling
Connecting with peers to create bonding and mutual support	• Friendships • Social • Naturally forming

What follows next is stage six whereby the researcher utilises interpretations of the secondary constructs to synthesise and make sense of the translation process. According to Noblit and Hare (1988), what should emerge is a set of three relationships where the analysis is either reciprocal, refutational or in line of

argument. The synthesis process was conducted and presented as a flow diagram, an example of which can be seen within Figure 10. Previous studies had utilised similar examples for synthesising translations, which offered a clear line of argument when undertaking this stage (Campell et al., 2003, Purc-Stephenson and Thrasher, 2010). The final stage within step seven concerns itself with the dissemination of the collected research and its findings to maximise impact (Toye et al., 2013). Once the translation of the synthesis had been completed, the primary researcher was able to adapt the flow diagrams into a conceptual model for PAL in clinical practice. To maintain credibility and trustworthiness, a review of each stage as well as any discrepancies were discussed with the research team. All themes and the final structure of the conceptual model were agreed by all authors.

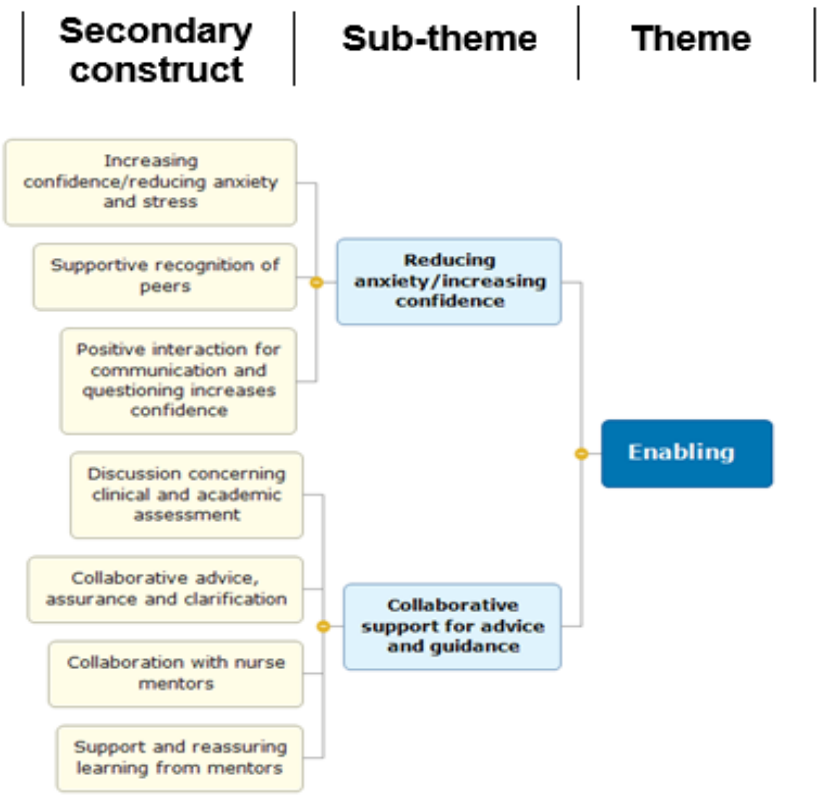

Figure 10: Stage six, example of synthesising translations for one theme

6.5 Results

The aggregated findings from secondary constructs were synthesised into four key themes; social, enabling, organisational and learning, underpinned by six sub-themes that make up the conceptual model for PAL (Figure 11).

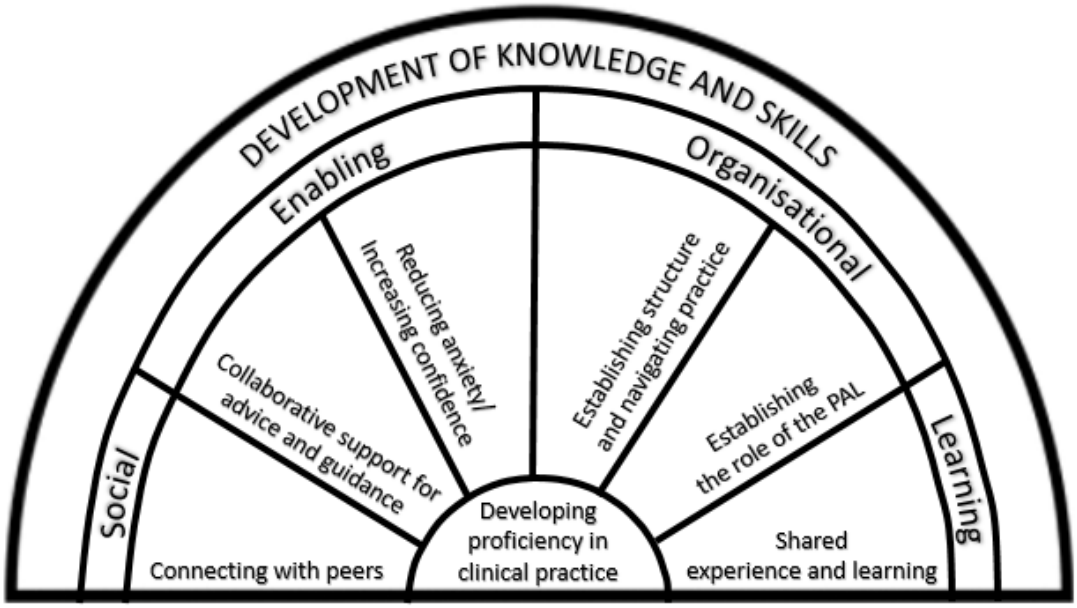

Figure 11: Conceptual model for peer-assisted learning

Social

The social theme is comprised of the sub-theme: ‘connecting with peers’, in which socialisation forms an important part of PAL. Connecting with peers acknowledges how contributions towards PAL in practice are often underpinned by the communities formed by students who through shared status of equals develop friendships and practice socialisation. The sub-theme was aggregated from the secondary constructs; ‘connecting with peers to create bonding and mutual support’ and

'context for peer interaction and non-interaction'. Connecting with peers to create bonding and mutual support takes into account how students converge together through their acknowledgement of their role, use each other as valuable sources of information and thus form their own community of support as captured within the systematic review:

> *Peers naturally form the friendships needed and practice socialization to use each other as resources. Through these actions, they develop their own specific communities.'…'the students see each other as a discrete group which only fellow students can understand and so develop their own parallel community to help each other: being in the same boat.' [Systematic review]*

This sub-theme also takes into consideration the context for peer interaction and non-interaction, which further captures how peers interact with each other when engaging in PAL in clinical practice. Across both ethnographic studies exploring PAL amongst child health and adult student nurses, their interactions acknowledged socialisation as a key part when engaging in PAL. This was particular noted within the observational study with child health nursing students:

> *'It was noted the context of how these interactions could be formed based upon friendships and friendliness of other peers. The junior peer participants are all from the same year group and although they noted to have separate friendship groups, they gave a perceived impression of general acceptance and developing friendship towards one another.' [Observational study nursing students: child health field]*

Enabling

The enabling theme is comprised of two sub-themes: 'collaborative support for advice and guidance' and 'reducing anxiety/increasing confidence'. The first sub-

theme, ‘collaborative support for advice and guidance’ was aggregated from five secondary constructs: ‘discussion concerning clinical and academic assessment’, ‘positive interaction for communication and questioning’, ‘collaborative advice, assurance and clarification’, ‘collaboration with nurse mentors’ and ‘support and reassuring learning from mentors’. This sub-theme captures the importance of seeking advice, assurance and clarification for confirming understanding amongst student nurses engaging in PAL. Within these situations, students practice their ability to seek support within PAL that enables them to move forward in developing their knowledge and skills when in clinical practice:

> *‘Questioning was highlighted as an approach to check understanding and seek clarification of a variety of clinical questions and tasks. Interestingly this offered reference towards perceived increased confidence through the availability of peers.’ [Observational study nursing students: adult field]*

To ensure knowledge was correct, qualified nurse mentors were frequently called upon as part of a process of clarification and confirmation of actions undertaken, generally when peer knowledge had reached its limit:

> *‘Collaboration between first year student nurses and one of the qualified nurse mentors to seek clarification on aspects of the observations they have taken. Mentor clarifies the accuracy of their query and encourages them to make this as a note on the observation chart.’ [Observational study nursing students: child health field]*

The second sub-theme, reducing anxiety/increasing confidence was aggregated from two secondary constructs; ‘Increased confidence/reducing anxiety and stress’ and ‘Supportive recognition of peers.’ This sub-theme captures how students across both fields of nursing when engaging in PAL have increased confidence and are able

to reduce anxiety through the support of their peer colleagues. Furthermore, as seen in previous extracts, the process of seeking clarification and advice has increased perceived confidence of peers through these actions.

> *'Findings reflect how peer learning and support have perceived positive benefits in decreasing stress and anxiety and improving self-confidence.' [Systematic review]*

Organisational

The organisational theme is comprised of two sub-themes: 'establishing structure and navigating practice' and 'establishing the role of the PAL.' The first sub-theme, 'establishing structure and navigating practice' was aggregated from two secondary constructs: 'peer support for infrastructure and environment' and 'navigating the course in clinical practice.' Finding your way in practice was captured as a point of concern for student nurses, who often worked solo in their practice placement areas. Interestingly students across the fields of child health and adult nursing found that engaging in PAL provided organisational benefits. Students were able to establish where they fit into the structure as student nurses and use each other for navigating clinical practice on a daily basis, utilizing PAL as:

> *'An opportunity to establish a better understanding of the working structure, but also where they fit into their role as student nurses. Interestingly some of the junior peers were located in different clinical areas, but the opportunity to support each other in navigation was not restricted to one particular clinical area.' [Observational study nursing students: child health field]*

The second sub-theme, 'establishing the role of the PAL' was aggregated from two secondary constructs; 'complex choices when sharing learning opportunities' and

‘delegation and planning roles.’ These constructs highlighted the importance of how student nurses establish their roles when engaging in PAL. The complex choices that students faced when engaging with PAL often came from challenges of negotiating tasks, personality clashes and more accurately student nurse peers lacking ability to clearly define their roles:

> *‘These arose occasionally in the area of accurately defining the roles of peers within the same pairs. This was evident in aspects of clinical task allocation. In these instances, it was noted by one peer that their partner was keen to take on the lion share of the clinical activity.’ [Systematic review]*

Interestingly, the primary studies exploring the influence of PAL amongst groups of child health and adult student nurses found the reverse. In reports from these findings, it was noted how student nurses from both child health and adult fields took the time to establish their roles and responsibilities linked to task allocation:

> *‘The role of assigning a task or a role was presented as an open and fluid discussion between peers with an equal sharing of thoughts and ideas when engaging with PAL. Within these discussion peers were able to plan the task to be completed by defining the parameters and ensuring through effective communication that each person was clear on their role.’ [Observational study nursing students: adult field]*

Learning

The learning theme is comprised of the sub-theme: ‘shared experience and learning.’ This sub-theme takes into the account the opportunities for developing knowledge and skills and how PAL contributes towards students’ learning. The sub-theme was derived from seven secondary constructs; ‘sharing of practice experience’, ‘enhancing knowledge of care’, ‘complementary learning aids clinical skill development’, ‘positive support linked to clinical observation and clinical task’,

'informal interaction for teaching, learning and discussion', 'discussion linked to best practice standards' and 'working together to provide patient care.' Viewing the concept of learning as a whole, student nurses who engage in PAL are able to develop their knowledge through discussing standards of care and their actions when working together as PALS. In addition, they were able to develop their skills as student nurses, helping to better apply these to their role and those under their care:

> *'Together these findings reflect how peers work together to develop their clinical knowledge and skills, as well as their judgement to model effective care.' [Systematic review]*

Furthermore, learning was also obtained through student nurse peers who utilised shared experiences and previous knowledge to apply this within the opportunities presented when engaging in PAL:

> *'The context for sharing of experiences were used to reinforce learning around topics of clinical practice.' [Observational study nursing students: child health field]*

6.6 Discussion

This newly created conceptual model for PAL in clinical practice provides a structure in which the overall goal is the development of knowledge and skills to help student nurses become more proficient in clinical practice. This follows a similar notion to the novice to expert model, whereby the acquisition of knowledge and skills is achieved through levels of proficiency, underpinned by experience and learning (Benner, 1984). Each of the four themes within the conceptual model highlights key elements

required for student nurses to be able to develop the necessary knowledge and skills to enable them to become proficient as nurses in clinical practice.

Socialisation practice appeared to be an important factor in peers connecting with each other to engage effectively in PAL when in clinical practice. The impact of socialisation has been acknowledged as a key point of nurse education, whereby nurses need to be properly socialized within their profession to be effective within highly functioning teams (Levett-Jones et al., 2009, MacMillan, 2013). The role of modelling professional socialisation has been highlighted as the responsibility of the qualified nurse mentor (Royal College of Nursing, 2017a). Informal socialisation between students and nursing staff has been acknowledged as a means to relieve stress, however, controversially students has also found themselves to be socially excluded by nursing staff (Levett-Jones et al., 2009). Within the engagement of PAL, students were able to develop community and a sense of belongingness for supporting one another in clinical practice. This finding was supported by Roberts (2009), who noted the importance of friendships amongst student nurses and encourage learning from one another.

One of the components that makes up part of the model was PAL being used for enabling the students to move forward in developing their knowledge and skills. This arose from the need for peers to be able to seek support of their colleagues through advice and clarification. A recent study captured the same within the support provided by student nurse peers in clinical simulation, whereby the ability to seek clarification and receive guidance from peers enabled knowledge and skills

acquisition (Li et al., 2018). This was consistent within another study exploring peer facilitation within clinical skills, in which support from peers enabled students to develop confidence in developing knowledge and skills to make them more proficient in their clinical practice (Davis and Richardson, 2017).

The concept of organisation and establishing structure for students engaging in PAL is one that is missing from the current literature. Students, as they engage in PAL, can be used as a means to determine where they fit into the structure of clinical practice as student nurses. Aside from the larger project, one study noted the challenges of student nurses working solo, without the input of peers, as a barrier to determining where they fit into the working structure (Christiansen and Bell, 2010). Peer-assisted learning appears to support development, particularly in relation to the knowledge of their student nurse role, and thus enhance their ability to navigate the clinical area. Despite its support, it was clear that role allocation was a challenge for peers, who found it difficult to find the balance in sharing out clinical tasks. This could be a potential barrier to the organisation of PAL in future research and therefore warrants further exploration.

The learning that is achieved when engaging in PAL, as outlined in theme four, is largely influenced by shared experience. When relating this back to Benner's (1984) Novice to Expert model, the importance of experience and its contribution towards proficiency in clinical practice is emphasised. Current standards for nurse education within the UK highlight the importance of proficiency as the end goal to enable students to qualify as nurses and progress onto the nursing register (Nursing and

Midwifery Council, NMC, 2018a). This is a task that is usually conducted by a registered nurse mentor; however, recent pressures on mentors, such as higher acuity of patients and staffing issues, make it more difficulty to provide positive clinical learning experiences (Hanson et al., 2018). The changes about to be introduced by the NMC, following its review of standards for pre-registration nursing (NMC, 2018a) are designed to address such issues.

Peers working together were able to develop their knowledge and skills and reinforce learning through their own-shared experience. This was directly observed by Austria et al. (2013) who found that shared experiences among peers helped to fill in gaps in the students' knowledge base. Furthermore, peers engaging in learning together helped each other to pass on practical skills through demonstrating and sharing through their own experiences (Roberts, 2008). This was often presented in senior to junior pairings when the sharing of knowledge and experience of senior students offered clear benefits to their junior colleagues (Austria et al., 2013, Carey et al., 2018b). However, it is important to acknowledge that shared knowledge and experience can benefit learning among student nurses within the same level of study. This has been captured in the experiences of practical skills presented by Roberts (2008), and with junior student nurses when assessing each other in their clinical skills (Rush et al., 2012). Considering the challenges faced by mentors and the support of learning provided by peers, it would be beneficial to consider whether the PAL model could provide a basis towards students assessing each other in the future alongside current models of mentorship.

Limitations

We acknowledge that the model was developed predominantly from a larger project and that not all elements were from published material. However, the available evidence of qualitative studies were included in the systematic review and we also acknowledged that the exploration of PAL within nursing clinical practice is limited.

6.7 Conclusion

The importance of developing knowledge and skills to facilitate student nurses becoming proficient in clinical practice is a current point of focus within a changing healthcare workforce. The emphasis of educating the future nurse leans towards models of peer coaching, but does not discount the need to look at options, such as PAL. The aim of this study was to create a conceptual model of PAL, informed by a secondary meta-ethnography that synthesised the evidence within a large study that considered the influence of PAL on student nurses within clinical practice. The development of this conceptual model presents a bold structure to outline the elements required for effective engagement and achievement of knowledge and skills attainment. These components highlight the previous captured data within the translation process and determine how these fit together to offer a more defined model that can be used within clinical practice as a structure for future engagement in PAL.

6.8 Recommendations for future research

The next phase in the research process is to evaluate the influence of the conceptual model when implemented within clinical practice. This will determine how the model

contributes towards the development of students' knowledge and skills when engaging in PAL from the perspective of educators and the students themselves. The benefits of meta-ethnography for identifying gaps in the research for further exploration were highlighted within the methods section (Britten et al., 2002, Campbell et al., 2003). On reflection of the newly constructed model, it is clear that the organisational principle presented data that polarised student perceptions in establishing the role of the PAL. It is therefore, recommended that further research would be required to explore how student nurses establish their roles when engaging in PAL in clinical practice. Further research is also required to consider the transition of student nurses with previous healthcare experience and how their support might differ when moving into a new role.

CHAPTER 7: DISCUSSION, LIMITATIONS AND IMPLICATIONS

7.1 Introduction

At this stage of the thesis, it is helpful to review the aim and objectives of the research. The study aimed to explore, for the first time, the influence of PAL on enhancing the learning of undergraduate nursing students in clinical practice.
The specific objectives were to:

1. To explore the extent of learning development across different year groups of students when engaging in PAL.
2. To identify if PAL provides opportunities for optimising education in clinical practice.
3. To identify the types of interactions that occur as part of PAL in the clinical setting.
4. To synthesise the available evidence to develop a conceptual model for PAL.

The findings from this observational study have resulted in the formation of three key themes: peers as facilitators to develop learning when engaging in peer-assisted learning; working together as peers to develop clinical practice and deliver care; and positive support and interaction from peers to enhance networking develop working

structure. These three themes were underpinned by 13 sub-themes, which together make up the framework that was developed using a novel qualitative approach, informed by data generated during three distinct phases of the research focusing on child health and adult nursing students working together as dyads in two NHS Trusts.

These observational findings were combined with the results of the systematic review, through the process of meta-ethnography presented in Chapter 6, and from this a conceptual model for peer-assisted learning was developed. Within this discussion chapter, the conceptual model will be explored further, with particular reference to the existing literature, to address the aims and objectives stated above. Furthermore, synergies between the concepts within the conceptual model will be explored.

7.2 Social interaction and the influence upon student nurses when engaging in PAL.

7.2.1 The importance of socialisation in shaping the community of practice.

Socialisation emerged early on as a key element within the conceptual model, forming one of the main constructs that enable effective PAL in clinical practice. One of the biggest challenges for a student is how to fit within the context of the clinical environment. Studies have shown that becoming proficient in knowledge and skills and learning in practice requires the ability to join a learning culture and community

of practice among fellow professionals and that, within this, lies the challenge of socialisation, which has been a long-standing issue (Lave and Wenger, 1991, Henderson et al., 2012). Clinical practice placements are complex social environments and integration into these pose significant challenges to students as they strive to be accepted by the clinical community (Cope et al., 2000, Levett-Jones and Leathlean, 2009). Cope et al. (2000) suggest that social acceptance within clinical practice is important to the student and can be achieved, but that newcomers often experience isolation. This phenomenon was also identified within the systematic review, which found that, during their early experiences, students nurses found themselves isolated and lost within clinical practice. It was through connecting with peers that the student nurses were able to find solace and support to enable them to form their own communities and friendships within clinical practice (Carey et al., 2018a). It was, therefore, suggested that peers naturally seek out each other for support within the clinical environment.

7.2.2 Context for social interaction and connection.

Connecting with peers was considered to be especially important for those students who were in the early stages of their placement and junior within their training (Carey et al., 2018b). Support for this also comes from the Phase two findings arising from observations of students. Junior student nurse peers were frequently paired together and they relied heavily upon the support of each other, as they were at the same stage of training. Roberts (2008) identified a similar concept and argued that the company of peers and sticking together were important aspects of settling into clinical practice, especially within a new placement, facilitating the swapping of

experiences and anecdotes. The role of PAL for assimilation into new environments was also seen amongst psychology students, who found that it facilitated socialisation and integration into the academic field (Byl et al., 2015). Therefore, it could be suggested that the implementation of the conceptual model in clinical practice would be of benefit to PAL if it was introduced when students commence their first placements in clinical practice in their pre-registration programme.

Early observations of senior student nurses in site one revealed that, for them, there was not the same requirement for socialisation and connecting with other senior student nurses. This was also noted by Bae et al. (2017), who used social network analysis to explore team working amongst qualified nurses. They noted that nurses with higher education and competence worked more autonomously than collaboratively with their peers (Bae et al., 2017). However, the relationship between junior and senior dyads was clearly important and junior students seek out their senior colleagues for support, especially when engaging in clinical tasks. This concurs with earlier findings, which concluded that junior nurses saw their senior colleagues as sources of emotional support and protection against social isolation (Christiansen and Bell, 2010). Furthermore, senior nurses saw their role as a positive one in supporting their junior colleagues in clinical practice (Giordana and Wedin, 2010). When applied to the conceptual model, it is clear that PAL could be established among same stage and junior to senior dyads, however, the benefits when applied to paring of senior students' warrants further exploration.

7.2.3 Social interaction for enhancing knowledge and skills

The openness and willingness of students to connect with each other within the study led to enhanced shared learning experiences. Wenger et al. (2012) explored the importance of communities of practice, in which social groups use each other's connections, relationships and experiences of practice as resources. Aligned with this, Walsh (2015) argued that peer group relationships and social interaction between mental health nursing students were central to learning in both theoretical and simulated settings. However, Walsh (2015) provided unclear contrast on the influences within the clinical practice setting and how peer 'groups' worked together and what knowledge and skills were obtained. What is clear when considering the types of interactions and scope for learning development is the acknowledgement that a culture exists that has received limited exploration in relation to the current literature.

The relationships that existed between the student nurse peers identified within the research presented in this thesis helps to uncover for the first time how they relate to practice, where they fit into its structure and how this culture contributes towards their learning, which comes into other aspects of the conceptual model. However, these relational attributes are important in determining the ties and connections that bring students together and enable them to learn; similarities that fit with social network analysis (Scott, 2013). Social Network Analysis has been used as a tool to explore health professional relational networks, highlighting knowledge sharing when seeking advice amongst colleagues in same professional groups (Cunningham et al., 2012). However, the evidence is limited and by exploring the development of

knowledge and skills, Social Network Analysis could provide means within the future of testing the conceptual model to better understand the social connections and how these contribute towards the engagement of PAL in clinical practice.

7.3 Enabling PAL to develop students' proficiency in knowledge and skills

7.3.1 PAL's association with relief of anxiety

In terms of learning development, the conceptual model presents factors that help to explain how PAL is fundamental in enabling student nurses to develop knowledge and skills. A construct of this 'enabling' portion of the model creates a platform for development of knowledge and skills to exist. Notably this was presented in two sub-themes, collaborative support for advice and guidance and reducing student anxiety/increasing confidence. It was clear from the evidence that student nurses experience significant anxiety, caused by the unfamiliarity, uncertainty and feelings of abandonment when first entering into the clinical setting, which is a significant obstacle to students learning in clinical practice (Chesser-Smyth, 2005, Melincavage, 2011). A number of the papers explored within the systematic review (Carey et al., 2018) support the influence of PAL in clinical practice as an intervention that reduces student anxiety (Giordana and Wedin, 2010, Austria et al., 2013, Ravanipour et al., 2015). However, it is important to consider how these sub-themes contribute towards developing knowledge and skills.

Melincavage (2011) suggested that when student anxiety is decreased, an opportunity is created for learning to develop. This has been captured in examples where reducing anxiety has a positive effect on increasing confidence to enable learning to take place. As reported by Giodana and Wedin (2010), experiences from peers revealed that, when working with senior student nurses in clinical practice, their anxiety levels were reduced and this enabled them to develop in their confidence for undertaking simple skills. This phenomenon also has links with collaborative support for advice and guidance from other peers, as individuals who sought reassurance from their colleagues, grew in confidence and consequently this made them more comfortable and proficient in delivering skills (Giordana and Wedin, 2010). Austria et al., (2013) noted that, when engaging in PAL, decreasing anxiety and increased confidence acted as platforms for shared knowledge through enhanced recall of information, problem solving and using skills to provide patient care. Austria et al, (2013) also noted how student nurses felt more confident through their abilities to collaborate with their peer colleagues and cross check through seeking advice and guidance.

Similar examples have been reported in studies investigating PAL for newly qualified doctors. Thampy and Kersey (2017) noted how the support provided within PAL reduced the anxiety of learners and thus, through increasing their confidence, enabled them to develop in their knowledge and skills. That notwithstanding, the same study also noted an increase in anxiety for a small population acting within the senior role when instructing junior colleagues. This was only 4% of senior peers, with the remaining 96% indicating that this role reduced their anxiety as they grew in

confidence in recognising their own clinical knowledge (Thampy and Kersey, 2017). Sprengel and Job (2004) noted the same among student nurses engaging in PAL within the clinical setting, whereby senior peers increased their confidence and were able to recognise the development of their knowledge and learning through PAL. Similar examples emerged among nursing student peers engaging in PAL within a simulated clinical skills context. Those who provided a supportive role to other peers reported perceived increased confidence in their ability to offer advice and guidance to their peers, which resulted in the learner gaining confidence in their knowledge of clinical skills topics (Stables, 2012, Ramm et al., 2015).

Learning within clinical settings derived from shared experience and learning opportunities provided through PAL, a common factor in Phase two (Carey et al., 2018b). One systematic review captured this among workplace culture of qualified nurses whom value and learn from their colleagues' clinical experience, knowledge, influenced by their enthusiasm (Davis et al., 2016). Furthermore, a lack of peer support in clinical practice presented barriers to learning, removing opportunities for shared experience, thus resulting in increased anxiety (Davis et al., 2016). In the simulated setting, student nurses valued shared experience when learning new skills from one another. However, a small portion found being watched by others to increase anxiety (Felton et al., 2013). Controversy, further study found this process to reduce anxiety and increase confidence (Zentz et al., 2014). Peer-assisted learning among physiotherapy students in clinical settings, promoted opportunities for shared experience and learning to reduce anxiety and build confidence. Both studies found that reducing anxiety and increasing anxiety enabled the development

of knowledge and skills (Zentz et al., 2014, Sevenhuysen et al., 2015), a notion aligned with the conceptual model. Translated to nursing students, it could be suggested that this shared experience forms part of PAL culture across settings, creating opportunities to optimising student education in clinical practice and develop knowledge and skills.

7.3.2 Advice and guidance to enable development of knowledge and skills

Collaborative support providing advice and guidance for enabling student engaging in PAL was a clear theme when considering the types of interactions among participants. These were seen as a means to develop learning and indicate that this reduces stress for student nurses engaging in PAL (Carey et al., 2018b). Collaborative support linked to PAL has been noted in the medical education (Sevenhuysen et al., 2016). However, Phase two observations in clinical practice noted the importance of this as a means to develop learning (Carey et al., 2018b).

Fostering enquiry further enhances knowledge and skills during PAL, because students were able to ask questions and did not feel restricted in seeking the accurate support they required when engaging in clinical practice settings. The use of ‘non-judgemental’ questioning has also been found to be useful as a strategy to guide peer teachers (Olsher and Kantor, 2012). The benefits demonstrate how this strengthens the knowledge and skills of novice peers alongside a perceived increase in confidence for both the novice and expert. Through the culture of ask anything, the peers were able to construct new knowledge and independent thought to enable them to become more independent learners in the future (Olsher and Kantor, 2012).

A significant findings of this research is that, contrary to previous studies, the enabling concepts were not solely derived from a junior to senior relationship (Sprengel and Job, 2004, Giordana and Wedin, 2010, Austria et al., 2013), but instead, both collaborative support for advice and guidance and reducing anxiety/increasing confidence can exist among student nurses within the same stage of study. This is an important factor that has implications for the future implementation of PAL, in that it has benefits across all stages of learning and levels of study, especially when implementing the conceptual model in clinical practice.

A unique area of discussion within Phase two was PAL to provide advice and guidance for clinical competencies and assessments (Carey et al., 2018b). This presented as a sub-theme, and was later synthesised within Phase three to make up part of the enabling theme of the conceptual model. The objective to exploring opportunities for optimising education, included collaborative support by peers to support the planning of competencies and offer support in undertaking some of the practical examples.

Peer assessment is an area that is sparsely reported in the current nursing literature, with limited examples relating to basics of skill proficiency in the clinical simulated setting (Rush et al., 2012), with further limited literature in the clinical setting (Carey et al, 2018b). However, the opportunity to support the planning of assessments in clinical practice has benefits among peers. Payne et al. (2015) implemented mock competencies skills assessments within the clinical skills environment. Student nurse peers worked together to assess each other's learning in relation to competency

assessment. The outcome was improved student pass rates in first time skills assessment, reducing stress and anxiety and support the utilisation of peer mentoring and assessment of competencies in future strategies (Payne et al., 2015).

With the release of new standards for nurse education in the UK, the Nursing and Midwifery Council (NMC) encourage student nurses to demonstrate proficiency in supporting and supervising one another to evaluate and document their performance in clinical practice (NMC, 2018a). Early indications of coaching models have emerged to support this (Lobo et al., 2014), as well more recent evidence, which discuss the contribution of PAL towards future models for teaching and learning in clinical settings (Carey et al., 2018c). The timing of the research highlights opportunities for future research to determine how competency assessment amongst peers translates to the clinical environment to further optimise nursing education and ultimately patient care. Moving forward, this is a theory that should be examined alongside that of the conceptual model within the clinical setting.

7.4 Organisational aspects of structures of PAL in clinical practice

7.4.1 Structures of PAL in clinical practice

One of the clear challenges in this area of research, as indicated within the systematic review, was the lack of clarity around definitions and terminology associated with PAL (Carey et al., 2018a). Furthermore, there was lack of clarity with regards to the structure of PAL in clinical practice settings. The organisational aspect

of the conceptual model takes into consideration establishing a more formal structure for PAL. In relation to its organisational structure, it is important to account for factors related to all phases of study, which include formal and informal structures of PAL in clinical practice and the levels of study of student nurses. In terms of PAL as a concept, it can be argued that it exists both formally and informally (Carey et al., 2018b).

Peer to peer interactions highlighted within the systematic review included examples from included papers, in which peers were allocated to a pair or dyad relationship often between a senior and junior peer within a formal role (Carey et al., 2018a). However, some of the included papers did note informal peer learning in clinical practice, whereby students had access to their peers based upon the convenience nature of placement allocation and student numbers, and not specifically arising from a formal structure of PAL (Roberts, 2008, 2009). These studies noted found that peers from the same stage of study, as well as senior peers, interacted together as part of PAL and were largely positive in the support provided by peers. This was also captured in observations within Phase two of the current research, among child health nursing students (Carey et al., 2018b) and adult fields of nursing across all sites and participant groups. The importance of these informal structures was largely determined by the community in which the practice occurred and the shared culture of ‘being in the same boat’ (Roberts, 2008, 2009). Community culture and socialisation practice was also found to be important among formal structures and with student nurses as part of senior to junior parings (Ravanipour et al., 2015). This is an interesting point when considering the study as a whole because so little is

known about the current structure of PAL and how it is operating in real world clinical settings.

Formal structures of PAL in clinical practice, as identified within Phase one, were explored, and particularly focused on how it works in senior to junior parings (Carey et al., 2018a). A recent study has considered students engaging in PAL at closely related stages of study as 'near-peer' (Gostelow et al., 2017). What was also noted from Phase two is that peers were not only restricted to pairs, but also engaged in PAL with extended numbers of peers. If more than one student nurse was on shift, then there were occasions where peers were seen to collaborate together to share knowledge. Furthermore, it was noted how senior nurses would support the learning of more than one junior peers through teaching demonstration (Carey et al., 2018b). The use of PAL for small group teaching within placements has been demonstrated in other fields such as dietetics (Reidlinger et al., 2016) and medicine (Burke et al., 2007). These examples were formally structured PAL, and they also note positive benefits in improved shared learning experience, as well the importance of social learning through connecting with peers (Reidlinger et al., 2016, Burke et al., 2007).

It was also apparent that establishing more formal structure for PAL was associated with the need to navigate the clinical practice setting. Navigating the course in clinical practice was a clear part of PAL, as identified within Phase one (Carey et al., 2018a). This was further supported by Phase two findings, which noted how PAL assisted students to settle into clinical placement and navigate the practice setting, especially in the early stages of a new placement (Carey et al., 2018b). Navigating

practice is a common concern for student nurses, especially during early experiences of new placements and were seen to be a source of anxiety, due to many factors including unfamiliarity with the clinical setting and the need for a sense of belonging (Levett-Jones et al., 2015, Grobecker, 2016). It appears that the structure that is established through PAL for navigating practice is an important means to addressing not only these issues, but also for determining where students feel they fit into the working structure (Carey et al., 2018b).

In terms of the organisational structure of PAL, this research clearly add to the existing body of knowledge in a number of ways. Firstly, PAL exists formally and informally. However, by implementing the different components of the conceptual model formally, greatest benefit can be gained, a hypothesis that is supported by earlier work in loosely related areas of learning in clinical practice (Birks et al., 2017, Boardman et al., 2018). Secondly, peer-assisted learning can be utilised by students of the same or different stage or study. Finally, PAL is not necessarily restricted to dyads; rather it has the potential to be beneficial to small groups of students in the clinical setting. This needs further consideration through the implementation of the conceptual model, as additional research is required, utilising both dyads and smaller groups of students.

7.4.2 Establishing the role of the PAL: A barrier or network to developing knowledge and skills?

An area of the conceptual model, which is still unclear and in need of further discussion, is the establishment of the role of the PAL. The evidence that was

presented within the findings of the systematic review indicated that students struggled at times to negotiate tasks due to competing with fellow student for the clinical experience (Carey et al., 2018a). These challenges interestingly arose in studies that utilised formal pairings of student nurses engaging in PAL. Ravanapour et al. (2015) argued that this was point related to student nurses having unclear skills of supporting others in practice and, therefore, took on the majority of the experience themselves. Austria et al. (2013) found similar circumstances in formal peer pairs, who struggled to define roles and share in the task due to only being allocated one patient and therefore one student became a passive observer, thereby limiting their learning. These issues did not feature in the current research, which contrasted with the findings of systematic review; in phases one and two, student nurses were not allocated to a single patient to negotiate care and all students had a willingness to share in the learning experiences presented in clinical practice.

The formal pairing of PAL can be beneficial. Naqi (2014) determined medical students using PAL as a formal tool provided learning opportunities to improve depth of knowledge and skills. Formal pairings of PAL in clinical practice were also seen to have multiple benefits as identified within the systematic review (Carey et al., 2018a). This would further support the needs to introduce the conceptual model within formal structure when assigning students. There are other factors at play in PAL. For example, personality can potentially impact upon the students' learning. Sprengel and Job (2004), when reviewing PAL amongst student nurses in clinical practice, found that first year student nurses found that quiet and timid senior students impeded their learning. Furthermore, Austria et al. (2013) suggested that a

dominant personality within a peer pair can lead one of the student nurses to control the learning experiences rather than sharing out these roles. Overall, mismatched personalities were shown to impede learning with the inclusion of lack of preparation and direction between student nurses engaging in PAL (Loke and Chow, 2007). Equally, it was suggested that positive personal qualities through a willingness to learn can have the reverse effect. More recently, Takase et al. (2018) evaluated the impact of personalities amongst qualified nurses and found that enthusiastic and conscientious nurses, who were willing to learn, improved their learning and competence in clinical practice. This willingness and positive response towards delegating roles was noted within multiple observations amongst both child health (Carey et al., 2018b) and adult student nurses. However, what remains clear is the limitation that personalities cannot always be clearly determined. If the conceptual model is to be implemented in the clinical setting then further consideration will be required to determine how to prepare student nurses in establishing their roles when engaging in PAL.

7.5 Limitations of the research

In this thesis it is important to acknowledge the limitations that inevitably arise in research of this nature. The first one is the characteristics of the participants across all groups within Phase two. The number of female participants were higher compared to male student nurses. This reflects the wider prevalence and progress of male students into nursing, which is limited (Maykut et al., 2016), and thus, can be seen as a contributory factor to this limitation. A similar limitation was noted in a

recent study exploring peer mentorship amongst nursing students (Smith et al., 2015).

Secondly, the timing of data collection within Phase two must be considered as a limitation. When the observational data were collected, not all student year groups were out on placement. Therefore, this imposed natural limitations on the PAL dyads, in the stage of training of the dyads depended on the placement allocation. This needs to be considered when implementing the conceptual model in the future to ensure all levels of study are able to access PAL.

A third limitation relates to the potential influence of the observer. Participants across all stages of data collection within Phase two were aware that the observer was a lecturer in the field of nursing. This was initially presented to the students as part of the PIS to ensure transparency. Furthermore, this was acknowledged within the research protocol and considered strategies to minimize a power influence. Following the signing of the consent forms the observer (myself as PhD student) met with participants to answer any queries. At this time the observer acknowledged his lecturer role, but stressed the point of their clinical background and the interest in PAL as the focus for observations and not to 'assess' them in relation to the academic role. The observer initially conducted practice observations within each of the sites to provide time to build rapport with the participants. The observer also spread their time across all settings across the two research sites. This enabled participants and clinical staff to become familiar in my presence and conduct within observations.

A fourth limitation arises from the material synthesized within the meta-ethnography. The research acknowledges that the conceptual model was developed largely from constructs within the thesis and not all published material. However, aspects of these constructs derived from external evidence, in the form of qualitative papers included within the systematic review. Furthermore, the research acknowledges the limited evidence surrounding PAL in clinical practice, which influences this.

A final consideration acknowledges the limitation related to the nature of qualitative study methodology. It is known that the qualitative research presents challenges in reliability and replicability in the process and generation of results compared with quantitative methods (Leung, 2015). Maintaining rigor can be challenging to ensure that the research is not influenced by the researcher's bias (Anderson, 2010). It is therefore the role of the researcher to give careful consideration to ensure that these factors have been addressed. Furthermore, the researcher's presence during data collection is often unavoidable, which can affect participant responses (Pope and Mays, 2006). Findings that are generated through qualitative research can be challenging and time consuming to characterize in a visual way (Anderson, 2010). However, within this study I, as the PhD student had attempted to demonstrate this where possible through the creation of a Framework and the generation of the conceptual model. Despite some these challenges strength is maintained in the ability of qualitative research to explore research questions in greater detail and depth. This methodology has also demonstrated to obtain rich data from human experience and observation, which is powerful and sometimes more compelling than quantitative data (Anderson, 2010).

7.6 Implications for practice

Within the introduction to the thesis, it was highlighted that minimal consideration had been given to PAL in relation to clinical practice, particularly for nursing students. Furthermore, in the UK, growing pressures on registered nurses to provide adequate mentorship were resulting in shortages in clinical placements as well as issues relating to the quality of the supervision that did take place (Lloyd-Jones et al., 2001, Hurley et al., 2008). This was also highlighted through the systematic review, which reinforced the need to further explore how PAL worked in practice with student nurses in clinical practice (Carey et al., 2018b). Interestingly, the initial challenges of mentorship and student support are still present and unlikely to be resolved in the short term. Mentors within the clinical practice setting are still faced with their own issues, related to lack of value within the role and having protected time to support student learning (Clark and Casey, 2016). Through the research, the exploration of PAL has led to new evidence and subsequent contributions to the body of knowledge in its application to the field of nursing and in the generation of a new conceptual model. Given the need to increase the numbers of nurses in practice world-wide, these findings are both timely and relevant.

Within the UK, the number of vacancies within nursing is rising, further compounded by a steady decline in figures of nurses joining the register and international nurses leaving due to uncertainty within the European Union (Nursing and Midwifery Council, NMC, 2018b). Unfortunately nursing has never been before been seen in such a poor light. A recent review by the Royal College of Nursing (RCN, 2017b) presented the consideration of impending crisis in the future supply of nursing staff,

due to a lack of adequate workforce planning and workforce strategies. More specific points highlighted nursing staff leaving the profession due to workload and pay pressures, and cumulative impact on the supply of new nursing staff resulting from restrictions on the commission of student numbers (RCN, 2017b). This puts pressure upon the existing workforce of mentors in practice and offers little attraction to those who are considering entering nursing as a career. Furthermore, studies have shown the emotional stress for mentors who feel unable to balance the commitment of student learning and patient care, as well as stress caused in supporting struggling students in clinical practice (Black et al., 2014, Clark and Casey, 2016).

The professional regulator for nursing in the UK, the Nursing and Midwifery Council, is responding to the pressures in practice, and have made changes to structured approaches to and revision of the term mentorship. New standards for pre-registration education and to the role of assessors in clinical practice have been released (NMC, 2018b). Despite the need to change models of student support, this does not come without its challenges or address the issue related to the number of mentors and pressures in clinical practice.

It is important that students are well prepared to face the challenges of practice today and so it was important to ask the question how does PAL and the conceptual model support students to learn within a stressful environment? The stress experienced by students was clear within the study, however, much of this was alleviated through PAL, as students rely upon each other to survive and support one another in clinical practice. This was highlighted within the conceptual model, which

noted the importance of PAL in reducing the stress and anxiety of students. Furthermore, social interaction and support has been proven as an effective means to reducing stress on well-being (Yildirim et al., 2017). Addressing these factors enables for learning to take place, as discussed in the previous chapter. Adding to this is the importance of the conceptual model to support students within a community of practice, encouraging shared knowledge and experience to foster new learning and develop professional skills as expressed by Wenger and Snyder (2000).

7.7 Implications for education

The timely nature of this study and the introduction of the conceptual model offer not only a unique contribution to the body of knowledge but also provide implications for nurse education and the transferability of the findings to other healthcare fields. Recent reports within the media highlight challenges faced by the future nursing workforce, impacted particularly by a significant reduction in the number of students enrolling onto nursing programmes. One report noted a 31% drop in applications to study nursing between 2016-2018 (The Guardian, 2019). To translate this, there was a drop seen of 500 students accepted onto nursing programmes in the UK in the year following the removal of the NHS funding for these and other health profession programmes (De Castella, 2018). Furthermore, such reductions and other factors are impacting on staffing shortages, and enhance the risk to patient safety (Royal College of Nursing, 2018).

The severity of the shortages has led to governing bodies and representing institutes to consider solutions to address these issues as they rapidly decline. The Council of Deans of Health (2018) released a recent report to encourage the fostering of student nurse leadership in education. Findings from the report highlight the importance of role-modelling, networking and socialisation, building confidence and acting as mentors to other students, which are factors that are further reflected within the conceptual model (Carey et al., 2018c). Thus, the timely nature of the model is such that it is now ready for further testing within the education setting to meet the needs of student nurses through utilising the concepts of the model. Furthermore, there is an opportunity to build a network of students supported in their learning and community established through PAL. Academic colleagues along with the students will be required to be introduced to the conceptual model early on at the beginning of their pre-registration programme to provide familiarisation and context for where PAL sits within the curriculum and how it will be utilised within student learning.

Higher education institutes will be further challenged through the introduction of new nursing standards for the preparation of registered nurses, which must be adopted and built into all pre-registration nursing programmes approved from July 2019 (NMC, 2018a). The workforce shortages have also led to the generation of new roles and entry pathways into nursing, as a career such as foundation level preparation in the form of nursing associates, and apprenticeships. Apprenticeships may look to boost the healthcare workforce, but this is not a quick fix. However, the on the job learning and utilisation of previous experience of applicants mean that these students as well as those on traditional degree programmes have much to learn from

each other (Webster-Henderson, 2019). Again, this provides an opportunity for the conceptual model to be introduced and applied to these and other healthcare professions, programmes and pathways into professional healthcare careers.

Discussions presented within this thesis have touched upon the links between PAL and other healthcare fields. The concept being familiar to other professions should create a smooth transition to introduce healthcare academics and the workforce to the conceptual model and adoption to test this in real-world settings. Furthermore, programmes of nursing and other healthcare professionals at the University of Plymouth participate in the peer assisted learning scheme (PALS), which echoes the ethos of PAL to support induction of students in university life (University of Plymouth, 2019). Through these initiatives, the groundwork is laid for the implementation of the findings of the study and further introduction and adoption of the conceptual model.

Dissemination of these findings are essential so that Higher Education Institutes (HEI's) are aware of the value of the conceptual model and its contributions towards enhancing the student experience and enabling effective learning to take place. This has commenced, as seen in this thesis, which has three published papers arising from the research. However, in order for this to be achieved further, sharing of the findings at conferences will provide opportunities for the model to be introduced early on in other undergraduate nursing programmes. Clinical skills and simulated environments currently use PAL as a positive initiative to support student learning.

Therefore, this could provide the perfect setting to introduce the model and its structure within a controlled environment, prior to students attending clinical practice. Once any tailoring has been done, it should be possible for the model to be adopted within the clinical setting, and there it has the potential to support student learning in helping them to grow and develop as nurses. Crucially, PAL has important benefits in the future support and development of students, as they learn to plan care, gain essential knowledge and skills and have these competencies assessed; these benefit both education and clinical practice, to ensure that high quality care is provided by registered nurses.

7.8 Implications for research

The implementation of the conceptual model needs to be considered as a potential solution to strengthening the resilience of student nurses as they progress through their pre-registration education. A recent study explored how student nurses build resilience through their clinical placements (Lopez et al., 2018), the findings from which highlight that resilience is obtained gradually, as they grow in experience, but impeding factors included support from peers and clinical staff as lacking in clinical practice. This relates to the challenges presented in the systematic review, however, this is where the conceptual model has the potential to address these concerns raised by Lopez et al. (2018).

Looking beyond nursing, the application of the conceptual model may have relevance to other vocational healthcare programmes. Application of PAL has been

touched upon in offering peer support and learning within other healthcare fields such as paramedicine, midwifery and physiotherapy to name a few (McLelland et al., 2013, Sevenhuysen et al., 2015). These studies note the value of PAL for peer support and the learning that is achieved among students and within interprofessional learning. The common element within these allied healthcare programmes are the requirement for students to gain experience and learn within the clinical setting. These types of programmes come with similar pressures to nursing in the availability of clinical educators, and encourage the need to explore the benefits of PAL within their fields (Sevenhuysen et al., 2017). These recommendations therefore provide a promising direction to adopt the application of the conceptual model of PAL in future research and practice.

7.9 Summary

The research along with the development of the conceptual model presents unique contributions to the body of knowledge for PAL and nursing students within the clinical setting. Socialisation is a key contributor, highlighting the importance of PAL for developing a community of practice and a sense of belonging. This was identified in Chapter one with exploration of PAL and its links to social constructivism as the underpinning theoretical framework, encouraging social interaction to facilitate learning (Fachikov, 2001). Thus, the dependability of socialisation not only is presented within Phases one and two but becomes a key structure within the conceptual model to indicate the importance of this factor in developing students' knowledge and skills. Furthermore, as students engage in PAL there are clear

benefits as anxiety is reduced and confidence increased. It is through these actions that students engaging in PAL develop their knowledge and skills to improve overall proficiency. The current structure of PAL has presented significant gaps in terms of existing literature, however, through this research these structures become clearer. Establishing the role of the PAL has benefits, but also challenges presented within the discussion. However, the development of the conceptual model offers to provide both structure and future direction for PAL in clinical practice.

CHAPTER 8: CONCLUSION AND RECOMMENDATIONS FOR FUTURE RESEARCH

8.1 Introduction

This thesis sought to address a significant gap in the evidence base related to the ways in which students learn with and from each other in practice. The systematic review drew together the available literature using qualitative meta-synthesis techniques developed by the Joanna Briggs Institute (Lockwood et al., 2015), and formed a new baseline from which to explore further PAL in clinical practice. This chapter focuses on summarizing the findings and how these sought to achieve the requirements for the doctoral degree.

8.2 Addressing the research questions

The research presented in this thesis was conducted over three years and aimed to explore the influence of peer-assisted learning (PAL) on enhancing the learning of undergraduate nursing students in clinical practice. The research further presented four objectives, which were achieved through three distinct phases as indicated in Figure 1 (page 25).

Phase one, sought to determine the experiences of student nurses engaging in PAL within clinical practice. This was conducted through a systematic review,

demonstrating a systematic acquisition and understanding of a substantial body of knowledge within this area. The review established the most relevant and up to date evidence and generated findings related to how students from all different year groups engaged through PAL. The review determined how interactions occurred both formally and informally and put emphasis upon the importance of establishing community. Support and feedback through PAL were key parts to developing learning and clinical knowledge. This in turn enhanced the competence of the student developing their confidence and reducing anxiety creating a platform for learning to take place. The systematic review led to the creation and interpretation of new knowledge, through original research, which went through a peer review process to achieve a publication through the JBI Database of Systematic Reviews and Implementation Reports (Carey et al., 2018b). Therefore, providing a contribution to the body of knowledge in an area with no previous existing published systematic reviews.

The work presented in Phase one identified gaps within the existing body of knowledge, and these helped to inform the next phase in the research process. The applied techniques for this research adopted ethnography to explore PAL further, to understand more fully what the approach meant to students in clinical practice as part of Phase two. Phase two was conducted over two research sites, with three groups of participants from the fields of Child Health and Adult nursing programmes. Initial challenges were presented within this phase, resulting in amendments to the IRAS ethics protocol to include an additional research site for stages two and three. In particular, time delays via the HRA to approve these changes and to inform and

update the new NHS site. These were met through the responsibility and autonomous initiative of the author to manage these changes and address complex questions presented through the ethics process. These were further translated to the Research, Development and Innovation teams linked to research site hospitals, to ensure parity and provide open and clear communication prior to undertaking data collection. Phase two revealed how students engaging in PAL become invested in the learning experiences and how they have much to learn from one-another through the support provided by other student nurses. Furthermore, PAL offered benefits across multiple year groups and through dyad and small group interactions. This phase led to the generation and application of new knowledge contributing to the area of PAL in clinical practice. The work undertaken for stages one and two were published within a high impact factor journal, acknowledging original research, presenting unique qualitative methodological techniques, for exploring PAL in clinical practice previously limited within the current literature.

These two phases met the first three objectives of the thesis as identified in Figure 1, and findings from both of these were utilised to inform the final phase of research for this project. Within Phase three, the data generated through the previous phases were synthesized through meta-ethnography, to generate a new conceptual framework for PAL in clinical practice. Through interpretation of the meta-synthesis, this final phase created new knowledge, that was presented through a new model, offering unique contributions previously unseen in the area of PAL. The model identified key areas that if applied, can be used to inform how PAL is developed, used and expanded in clinical practice to enhance the knowledge and skills of

student nurses. It was through this final phase that objective four was met and further disseminated through publication to the open access journal, Nursing Open. The merits of publication and peer review processes were thus demonstrated throughout all phases of the research, whereby the author of the thesis was the first author for all associated publications.

The influence of PAL on enhancing the learning of undergraduate nursing students in clinical practice was explored satisfactorily through three phases, which resulted in the formation of several conclusions:

The first is that PAL, although its supporting empirical evidence remain weak, its structure clearly exists, and is presented through communities, formed by student nurses. These communities are underpinned by support and feedback, shared experience and role modelling, which are focused upon enhancing and developing one another in knowledge and skills attainment within the clinical setting. Through PAL, the results indicated that students grow in their confidence and competence and consequently decrease associated anxiety. Secondly, in light of a changing healthcare workforce, there is a need and a place for PAL to exist. Registered Nurse shortage do impact on the support available to students, who consequently create networks to support each other. It remains vitally important, within the changing structures, that students develop their knowledge and skills and thus, become more proficient in clinical practice. Through this ethnographic research, PAL has been shown to present benefits and gains that align with these recommendations. Finally through exploring the influence of PAL, it has been possible to develop a structured

model for future engagement in PAL, outlining elements to advance knowledge and skills attainment. This now needs further testing to ensure trustworthiness of the concept.

8.3 Recommendations for future research

Following the completion of this body of research, it is important to consider the future direction of its contributions to the body of knowledge and how they will inform research moving forward. Following Phase three, the generation of a new conceptual model presents opportunities for testing in the real-world setting. Therefore, further research is required to explore the implementation of the conceptual model among other student nurse dyads and secure it place in the science associated with nursing education. It was indicated within the research that there is scope for PAL to be beneficial outside of the dyad paring, therefore, it would be useful to measure the educational and clinical value of the conceptual model and whether it can be utilised among other small groups of students. Within this exploration and implementation of the model it would be necessary to further evaluate the student experience and also to determine whether the application of the conceptual model has the potential to strengthen student resilience in the clinical practice setting. Furthermore there is scope to consider value in relation to how the model contributes towards the nursing programme curriculum, and its implementation through the support of academic teams delivering student nurse education. There is some evidence to indicate the presence and value of PAL in other healthcare disciplines. Therefore, following the implementation of the model among student nurses, it would be valuable to conduct

further research, which ascertains the potential for transferability to other fields of health professional education.

8.4 Final thoughts

A very limited number of studies published throughout the last decade have captured the value and benefits of PAL in both educational and clinical settings, and across many healthcare fields. Thus, the significant gaps in the evidence appertaining to student nurses in clinical practice were clear in the early stages of this journey. Throughout this PhD programme, the research has contributed to the body of knowledge by synthesising and drawing together the existing qualitative evidence of PAL in clinical practice. It has provided a contemporary view of the influence of PAL within clinical settings across nursing fields in the UK. Furthermore, and most excitingly, the research has led to the introduction, into the body of knowledge, of a model for PAL that has never before existed. As we go through this critical period within the field of nursing, there has never been a more important time for PAL to exist. Thus, the timely nature of the model will, it is hoped, help to heighten the value of student nurse peers supporting each other, to learn and develop the skills required to make them into proficient nurses of the future.

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APPENDICES

Appendix I: Systematic review protocol

SYSTEMATIC REVIEW PROTOCOL

The role of peer-assisted learning in enhancing the learning of undergraduate nursing students in clinical practice: a qualitative systematic review protocol

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Review question/objective: The objective of this qualitative systematic review is to identify and synthesize the best available evidence on experiences of peer teaching and learning among student nurses in the clinical environment.

The specific objectives are:

- To identify nursing students' experiences of peer-assisted learning (PAL) and teaching within the clinical setting.
- To identify qualitative data that highlight the strengths and weaknesses of PAL among student nurses in clinical settings.
- To explore whether PAL enhances the competence of student nurses' learning in clinical settings.

Keywords Nurse; nursing student; peer learning; peer tutoring; undergraduate

Background

Peer-assisted learning (PAL) is an initiative considering the benefits of peers working in collaboration and supporting each other in their professional role. Topping[1] defines peer learning as the "acquisition of knowledge and skill through active helping and supporting among status equals or matched companions"[1(p.6,30)]. The use of peer teaching to facilitate learning had been used by universities for many years.[1] Peer-assisted learning is utilized for the facilitation and support of integrating students into university's teaching and learning.[2] Other areas of terminology that are associated with PAL include "peer teaching",[3] "peer support"[4] and "peer mentoring".[5,6]

Evaluation of PAL within nursing has shown evidence of enhancement in the competence of student learning and self-efficacy in clinical settings.[3,7] Evidence also suggests that student nurses should be encouraged to become peer teachers.[8] Owen and Ward-Smith[9] evaluated the interactions during simulated learning between third-year students playing the role of patients and mentors alongside first-year students providing care and receiving guidance from senior students. This near-peer teaching approach provided a positive learning opportunity for all students and encouraged knowledge and skills attainment.[9] There is also evidence in the area of peer mentoring between second-year nursing student mentors and first-year mentees within the academic environment.[2] Benefits of these partnerships support the transition from university to nursing practice by preparing students to be mentored in clinical settings and reducing students' anxiety.[2,6,10] Thus, PAL in nursing seems to be beneficial to student's teaching and learning, although it has been argued that peers providing support lack the level of experience of professional teachers and educators.[1]

Peer-assisted learning has been gathering momentum for the last few years in other health professions.[11] A review demonstrated key concepts of PAL within the areas of peer teaching, training and peer assessment among medical students.[12] However, when exploring domains for learning within medical programs, it is clear that the focus is rooted within Higher Education Institutes (HEI) without clear consideration of the clinical environment.[11] Peer-assisted learning has been limitedly explored in Occupational Therapy education. Reason for not using PAL in Occupational Therapy could be related to difficulties in placement areas. Students are often

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There is no conflict of interest in this project.

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placed independently in clinical practice resulting in limited contact with peers in field.[13] Further exploration among other healthcare professionals provided limited consideration within midwifery. However, one study explored the impact of PAL between undergraduate midwifery students and paramedic students providing respect and understanding of each other's roles.[14] The limited evidence of the benefits of PAL in healthcare might be due to the differences in education and practice experience. Therefore, the structure, in particular to that of nursing programs, needs further exploration.

Within the United Kingdom (UK), not all nursing student learning takes place in HEI. The UK's Nursing and Midwifery Council standards for supporting learning in practice require 50% of learning to be undertaken within practice.[15] The responsibility of learning within these areas belongs primarily to mentors providing learning opportunities, feedback and assessment of competencies.[15] However, mentorship is not always perfect, and support varies in many ways. Andrews and Chilton[16] discovered that not all mentors see themselves as teachers. Increased clinical workload also becomes a factor limiting opportunities for students to work together with their mentors.[17,18] These situations often leave students feeling nomadic in their placement areas, which often lead students to seek out each other for support.[19] This is made possible due to the likelihood of being allocated to the same placement area as another student.[4]

Most of the learning that takes place between nursing students in practice has been addressed as informal.[19] The recognition of potential gaps in time spent with mentors and missed opportunity to learn alongside them has led to formal studies of peer learning in practice.[6] However, there is limited evidence available exploring the value of PAL and the students' interactions and behaviors within acute clinical settings. Campbell *et al.*[20] were one of the first colleagues exploring how student nurses learn in clinical settings. They found that peer support emerged as one of the most influential factors of student learning. Specific areas in which peer support was most beneficial encompassed the areas of providing emotional support, sharing experience to facilitate learning and using peers to support with physical tasks.[20] It was a further ten years before development in the area of PAL began to produce specific research related to PAL within nursing.

Considering the responsibilities of mentors,[15] a question that needs to be inquired is what competencies or competence exists between peers to facilitate learning. Competence has been difficult to define in nursing[21,22]; however, Roach[23] defines competence as "The state of having the knowledge, judgement, skills, energy, experience and motivation required to respond adequately to the demands of one's professional responsibilities."[23(p.3)] This should not be confused with the process of assessing specific competencies of student nurses in practice.[24] Chojecki *et al.*[25] found that the types of competencies that are developed by student nurses in clinical practice consist of knowledge, critical thinking, professionalism and psychomotor and technical skills. Prion *et al.*[26] explored competencies of preceptees' as knowledge, practical skills and attitudes. If these competencies are not reflected through PAL, the consideration of competencies such as attitudes and behaviors of peers that enable them to deliver learning to their peers needs to be explored.

Peer-assisted learning is gathering momentum in its formal recognition both within the UK and internationally.[12] With this in mind, a preliminary search of the literature identified numerous qualitative studies and limited quantitative studies that consider PAL and its associated terminology within nursing. To our knowledge, there was one related systematic review[27] published but none exploring the impact of PAL on nursing students' learning in the clinical environment. Therefore, this review protocol aims to explore the literature to synthesize and aggregate key themes that might emerge in relation to PAL among student nurses in clinical settings.

Inclusion criteria

Types of participants

The current review will consider studies that include undergraduate nursing students.

Phenomena of interest

The current review will consider studies that explore undergraduate nursing students' experiences of PAL within the clinical practice environment.

Context

Any clinical healthcare setting, including, but not limited to hospitals, emergency departments and outpatient clinics, will be considered.

Types of studies

The current review will consider studies that focus on qualitative data including, but not limited to, designs such as phenomenology, grounded theory, ethnography, action research and feminist research.

In the absence of research studies, other text such as opinion papers and reports will be considered.

The current review will exclude quantitative studies, studies addressing PAL outside the nursing profession and studies within the nursing profession but not including undergraduate student nurses.

Search strategy

The search strategy aims to find both published and unpublished studies. A three-step search strategy will be utilized in this review. An initial limited search of COCHRANE, ERIC, MEDLINE and CINAHL will be undertaken followed by analysis of the text words contained in the title and abstract, and of the index terms used to describe article. A second search, using all identified keywords and index terms, will then be undertaken across all included databases. Third, the reference list of all identified reports and articles will be searched for additional studies. Only studies published in English will be considered for inclusion in this review. Studies published in the last 12 years will be considered for inclusion in this review. This is due to the formal recognition and interest of PAL developing during that time, where previous occurrences were generally informal.[12]

The databases to be searched include:

ERIC
MEDLINE
CINAHL
COCHRANE Central Trials Register
ProQuest

Initial keywords to be used will be: "nurse*", nursing", "Student*;", "undergraduate", "Peer learning", "peer tutoring", "peer mentoring", "peer support", "clinical environment", "practice environment", "ward environment"

Assessment of methodological quality

Papers selected for retrieval will be assessed by two independent reviewers for methodological validity prior to inclusion in the review using standardized critical appraisal instruments from the Joanna Briggs Institute Qualitative Assessment and Review Instrument (JBI-QARI) (Appendix I). Any disagreements that arise between the reviewers will be resolved through discussion or with a third reviewer.

Data extraction

Data will be extracted from papers included in the review using the standardized data extraction tool from JBI-QARI (Appendix II). The data extracted will include specific details about the phenomena of interest, populations, study methods and outcomes of significance to the review question and specific objectives.

Data synthesis

Qualitative research findings will, where possible, be pooled using JBI-QARI. This will involve the aggregation or synthesis of findings to generate a set of statements that represent that aggregation, through assembling the findings rated according to their quality, and categorizing these findings on the basis of similarity in meaning. These categories are then subjected to a meta-synthesis to produce a single comprehensive set of synthesized findings that can be used as a basis for evidence-based practice. Where textual pooling is not possible, the findings will be presented in narrative form.

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Appendix I: Appraisal instruments

QARI appraisal instrument

JBI QARI Critical Appraisal Checklist for Interpretive & Critical Research

Reviewer _____ Date _____

Author _____ Year _____ Record Number _____

	Yes	No	Unclear	Not Applicable
1. Is there congruity between the stated philosophical perspective and the research methodology?	☐	☐	☐	☐
2. Is there congruity between the research methodology and the research question or objectives?	☐	☐	☐	☐
3. Is there congruity between the research methodology and the methods used to collect data?	☐	☐	☐	☐
4. Is there congruity between the research methodology and the representation and analysis of data?	☐	☐	☐	☐
5. Is there congruity between the research methodology and the interpretation of results?	☐	☐	☐	☐
6. Is there a statement locating the researcher culturally or theoretically?	☐	☐	☐	☐
7. Is the influence of the researcher on the research, and vice- versa, addressed?	☐	☐	☐	☐
8. Are participants, and their voices, adequately represented?	☐	☐	☐	☐
9. Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?	☐	☐	☐	☐
10. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?	☐	☐	☐	☐

Overall appraisal: ☐ Include ☐ Exclude ☐ Seek further info. ☐

Comments (Including reason for exclusion)

_____

_____

_____

Appendix II: Data extraction instruments

QARI data extraction instrument

JBI QARI Data Extraction Form for Interpretive & Critical Research

Reviewer _____ Date _____

Author _____ Year _____

Journal _____ Record Number _____

Study Description

Methodology

Method

Phenomena of interest

Setting

Geographical

Cultural

Participants

Data analysis

Authors Conclusions

Comments

Complete Yes ☐ No ☐

Findings	Illustration from Publication (page number)	Evidence		
		Unequivocal	Credible	Unsupported

Extraction of findings complete Yes ☐ No ☐

Appendix II: Overview of Joanna Briggs Institute and justification towards systematic review contributions

The Joanna Briggs Institute (JBI) was established in 1996 at the Royal Adelaide Hospital in South Australia. Named after the first matron of the hospital. JBI comprises of international health scientists, health professionals and health researchers, which are committed to best practice (Pearson and Jordan, 2010).

Through their philosophy JBI address global health through providing point-of-care access to evidence databases, decision support systems and implementation, evaluation and improvement tools. The Joanna Briggs Collaboration forms a network in excess of 70 International Collaborating centres (JBC) and other groups across the world, to provide Comprehensive Systematic Review Training Programmes (CSRTP). The University of Plymouth Collaborating Centre, which is a designated Centre of Excellence, was formed in 2013 and represents one of three centres of excellence in the UK delivering regular CSRTPs to a range of clinical staff.
As part of my role at the University of Plymouth, I underwent the JBI-CSRTP in 2015, which consisted of a five-day training programme, which included; understanding systematic reviews (SR), appraising evidence, developing and presenting an SR through the use of dedicated software developed by JBI. The software generated by JBI and known as the System for the Unified Management Assessment and Review of Information, or SUMARI (Lockwood et al., 2015), which provides a robust structure and template for conducting and presenting a systematic review from the ten types of templates available.

Following the training, JBI offer successful candidate's access to SUMARI to develop a quantitative or qualitative systematic review protocol and later complete review; these can then be submitted for publication within the Joanna Briggs Institute Database for Systematic Reviews and Implementation reports (Lockwood et al., 2017).

Lockwood, C., Munn, Z., Porritt, K. (2015) Qualitative research synthesis: methodological guidance for systematic reviewers utilizing meta-aggregation. International Journal of Evidence Based Healthcare. 13(3): 179-87.

Lockwood, C., Porrit, K., Munn, Z., Rittenmeyer, L., Salmond, S., Bjerrum, M., Loveday, H., Carrier, J., Stannard, D. (2017) Chapter 2: Systematic reviews of qualitative evidence. In: Aromataris E, Munn Z (Editors). Joanna Briggs Institute Reviewer's Manual. The Joanna Briggs Institute. Available at: https://reviewersmanual.joannabriggs.org/ [Accessed June 2016].

Pearson A., Jordan Z. (2010) Evidence-based healthcare in developing countries, International Journal of Evidence-based Healthcare. 8(2):97-100.

Appendix III: Search strategy

Database: ERIC, search date 22/11/17, final results: 2

Database: CINAHL, search date 23/11/17, final results: 225

Search id: (e.g. S1: Search one)	**results**
S1: peer learn*[ti,ab]	2,367
S2: peer mentor*[ti,ab]	640
S3: peer tutor*[ti,ab]	587
S4: peer support[ti,ab]	1,465
S5: peer assisted learning[ti,ab]	159
S6: S1 OR S2 OR S3 OR S4 OR S5	4,471
S7: DE: ‘‘Peer Teaching’’	4,403
S8: DE ‘‘Peer Groups’’	2,457
S9: S6 OR S7 OR S8	10,127
S10: nursing student* OR student nurse*[ti,ab]	2,910
S11: nursing undergraduate OR nurse undergraduate*[ti,ab]	283
S12: S10 OR S11	3,005
S13: DE ‘‘Undergraduate Study’’	12,443
S14: S12 OR S13	15,353
S15: clinical environment[ti,ab]	199
S16: practice environment[ti,ab]	1,600
S17: ward environment[ti,ab]	12
S18: S15 OR S16 OR S17	1,798
S19: S9 AND S14 AND S18	**2**
Legend: • DE-Descriptors [exact] • ti,ab-title, abstract	

Search id: (e.g. S1: Search one)	results
S1: peer learn*[ti,ab]	727
S2: peer mentor*[ti,ab]	487
S3: peer tutor*[ti,ab]	147
S4: peer support[ti,ab]	3,113
S5: peer assisted learning[ti,ab]	95
S6: S1 OR S2 OR S3 OR S4 OR S5	4,182
S7: (MH: ‘‘Peer Group’’)	9,535
S8: (MH: ‘‘Learning+’’)	80,014
S9: (MH: ‘‘Learning Methods+’’)	15,352
S10: S6 OR S7 OR S8 OR S9	91,507
S11: nursing student* OR student nurse*[ti,ab]	40,796
S12: nursing undergraduate* OR nurse undergraduate*[ti,ab]	4,126
S13: S11 OR S12	41,710
S14: (MH: ‘‘Students, Nursing+’’)	28,698
S15: S13 OR S14	41,845
S16: clinical environment[ti,ab]	4,300
S17: practice environment[ti,ab]	3,397
S18: ward environment[ti,ab]	397
S19: S16 OR S17 OR S18	7,682
S20: (MH: ‘‘Learning Environment, Clinical+’’)	1,689
S21: S19 OR S20	7,682
S22: S10 AND S15 AND S21	**225**
Legend: • MH-Exact subject heading • +-explode all trees	

Database: Medline, search date 23/11/17, final results: 134

Search id: (e.g. S1: Search one)	results
S1: peer learn*[MeSH,ti,ab]	884
S2: peer mentor*[MeSH,ti,ab]	555
S3: peer tutor*[MeSH,ti,ab]	204
S4: peer support[MeSH,ti,ab]	3,560
S5: peer assisted learning[MeSH,ti,ab]	182
S6: S1 OR S2 OR S3 OR S4 OR S5	4,855
S7: (MH: ‘‘Peer Group+’’)	17,372
S8: (MH: ‘‘Learning+’’)	335,982
S9: S6 OR S7 OR S8	354,935
S10: nursing student* OR student nurse*[MeSH,ti,ab]	30,831
S11: nursing undergraduate* OR nurse undergraduate*[MeSH,ti,ab]	3,569
S12: S10 OR S11	31,673
S13: (MH: ‘‘Students, Nursing’’)	20,941
S14: S12 OR S14	31,673
S15: clinical environment[MeSH,ti,ab]	5,566
S16: practice environment[MeSH,ti,ab]	2,950
S17: ward environment[MeSH,ti,ab]	471
S18: S15 OR S16 OR S17	8,669
S19: S9 AND S14 AND S18	**134**
Legend: • MeSH-Medical Subject Heading • MH-Exact subject heading • +-explode all trees	

Database: COCHRANE Central Trials Register, search date 23/11/17, final results: 203

Search id: (e.g. #1: Search one)	Results
#1: peer learn*[ti,ab,kw]	426
#2: peer mentor*[ti,ab,kw]	286
#3: Peer tutor*[ti,ab,kw]	166
#4: Peer support[ti,ab,kw]	5662
#5: Peer assisted learning[ti,ab,kw]	319
#6: #1 OR #2 OR #3 0R #4 OR #5	5,983
#7: MeSH descriptor [Peer Group] explode all trees	1189
#8: MeSH descriptor [Learning] explode all trees	15,039
#9: #6 OR #7 OR #8	21,026
#10: nursing student* OR student nurse*[ti,ab,kw]	2,559
#11: nursing undergraduate* OR nurse undergraduate*[ti,ab,kw]	266
#12: #10 OR #11	2584
#13:MeSH descriptor: [Students, Nursing]+	329
#14: #12 OR #14	2,584
#15: clinical environment[ti,ab,kw]	7905
#16: practice environment[ti,ab,kw]	2747
#17: ward environment[ti,ab,kw]	525
#18: #15 OR #16 OR #17	8396
#19: #9 and #14 and #18	**203**
Legend: • MeSH-Medical Subject Heading • MH-Exact subject heading • +-explode all trees • kw-keyword	

Database: ProQuest Theses and Dissertations, search date 24/11/17, final results: 3

Search id: (e.g. S1: Search one)	Results
S1: peer learn*[ti,ab,kw]	2,117
S2: peer mentor*[ti,ab,kw]	301
S3: peer tutor*[ti,ab,kw]	146
S4: peer support[ti,ab,kw]	2,558
S5: peer assisted learning[ti,ab,kw]	99
S6:S1 OR S2 OR S3 OR S4 OR S5	4,063
S7: MJMAINSUBJECT.EXACT("Peer Tutoring")	53
S8: S6 OR S7	4,063
S9: nursing student* OR student nurse*[ti,ab,kw]	1,130
S10: nursing undergraduate* OR nurse undergraduate*[ti,ab,kw]	164
S11: S9 OR S10	1,141
S12: MJMAINSUBJECT.EXACT("Nursing Students")	437
S13: MAINSUBJECT.EXACT("Nursing Education")	371
S14: S11 OR S12 OR S13	1,201
S15: clinical environment[ti,ab,kw]	2,037
S16: practice environment[ti,ab,kw]	9,261
S17: ward environment[ti,ab,kw]	136
S18: S15 OR S16 OR S17	10,799
S19: S8 AND S14 AND S18	**3**
Legend: • MJMAINSUBJECT.EXACT-exact subject heading	

Appendix IV: Excluded studies

Walsh A. The effect of social interaction on mental health nurse student learning. Nurse Educ Pract 2015;15(1):7-12.

> **Reason for exclusion: The study explored the effect of social interaction for learning amongst mental health student nurses. On further investigation the study was more focused upon the academic environment with no clear indication of the impact within clinical practice.**

Walker S, Dwyer T, Broadbent M, Moxham L, Sander T, Edwards K. Constructing a nursing identity within the clinical environment: The student nurse experience. Contemp Nurse 2014;49:103-112.

> **Reason for exclusion: The study explores the student nurse experience within clinical practice and mentions the term peer; however, there is insufficient evidence and discussion linking experiences of peers working together.**

Houghton CE. 'Newcomer adaptation': a lens through which to understand how nursing students fit in with the real world of practice. J Clin Nurs 2014;23(15-16):2367-75.

> **Reason for exclusion: lack of methodological quality. On further consideration, the study did not provide clear congruity between the research methodology and the interpretation of the results. The study also did not demonstrate adequate representation of the participants and their voices.**

Mamhidir AG, Kristofferzon ML, Hellström-Hyson E. Nursing preceptors' experiences of two clinical education models. Nurse Educ Pract 2014;14(4):427-33.

> **Reason for exclusion: On further investigation this study relates to peer learning in relation to registered nurse preceptors and not undergraduate student nurses.**

Brannagan K, Dellinger A, Thomas J, Mitchell D, Lewis-Trabeaux S, Dupre S. Impact of peer teaching on nursing students: perceptions of learning environment, self-efficacy, and knowledge. Nurse Educ Today 2013;33(11):1440–7.

> **Reason for exclusion: The study mentions the focus of peer learning in clinical teaching practice, however, on further examination the setting for this study did not meet the context for the inclusion criteria (clinical practice).**

Appendix V: Characteristics of included studies

Study	Methodology	methods	Phenomena of interest	Setting	Geographical	Cultural	Participants	Data analysis	Authors conclusions	Reviewers comments
Ravanipour; M., Bahreini; M., Ravanipour; M. - Journal of Education and Health Promotion (2015)	Qualitative content analysis	Focus group interviews	Exploring student nurses' experiences of peer learning in clinical practice	Clinical practice setting	Iran	28 female Iranian undergraduate student nurses	N=28, 91.4% female undergraduate nurses, mean age 22 years.	Thematic analysis	Nursing students reported general satisfaction concerning peer learning due to much more in-depth learning with little stress than conventional learning methods. Peer learning is a useful method for nursing students for practicing educational leadership and learning the clinical skills before they get a job.	Congruity between the methods and methodology. Conclusions drawn from the results relate to the aims of the study.
Austria; M.J, Baraki; K., Doig; A.K. - International Journal Of Nursing Education Scholarship (2013)	Qualitative interpretive descriptive phenomenology	Individual semi-structured interviews	Experiences of collaborative learning amongst undergraduate nursing students in the clinical practice setting.	25 bed inpatient surgical oncology unit	USA	Undergraduate nursing students	N=11 undergraduate nursing students and 9 patients. Nursing students assigned into peer dyads.	Thematic analysis	Peer engaged in collaborative learning report positive learning experiences. Reports included reducing student anxiety, increased confidence and task efficiency. Students also presented a challenge in the reduced opportunity to perform hands on skills, which had to be negotiated within each pair.	Clear method and methodology. Conclusions taken from the results of the study fit with the aims of the study.
Harmer; B.M., Huffman; J., Johnson; B., 2011	Mixed methods	Survey	Experiences of peer mentoring amongst undergraduate nursing students in clinical practice.	Clinical practice environment	USA	sophomore nursing students	N=32 sophomore nursing students. Paired 16 sophomore (first year) students with 16 senior students.	Thematic analysis	Clinical peer mentoring provides educators with an innovative strategy that partners students to provide care in clinical settings. It is consistent with situated learning theory. Tanner's Clinical Judgement Model used with student pairs improved their ability to reflect on practice, prioritize care, and make sound clinical judgement.	Contingency between the chosen methods and methodology. Conclusion flows form the results to remain consistent with the aims of the study.
Giordana; S., Wedin; B. - Nursing Education Perspectives (2010)	Qualitative descriptive phenomenology	Focus group interviews	Student nurses' experiences of peer mentoring	Nursing home practice setting	USA	Undergraduate nursing students	N=20 undergraduate student nurses	Thematic analysis	Mentees find it reassuring to have someone working with them who has already mastered skills for the mentoring experience. Mentees described feelings of improved self-confidence and reduced anxiety. Faculty staff also recognised reduced anxiety and had positive feelings about the peer mentoring experience.	There is congruity between the philosophical perspective and the methodology, however the aims and objectives are unclear.
Christiansen; A., Bell; A. - Journal of Clinical Nursing (2010)	Interpretive qualitative design	Focus group interviews	Pre-registration nursing students' experiences of peer learning partnerships in clinical practice	Clinical practice setting	UK	Undergraduate nursing students	N=54 undergraduate nursing students	Thematic analysis	Peer learning partnerships facilitated by mentors in clinical practice can support the transition to nursing for first year students and can help more experienced students gain a confidence and a heightened readiness for mentorship and	There is congruency between both the methodology and the interpretation of the results, the evidence provides clear themes and are credible.

									registered practice.	
Roberts; D. - Nurse Education in Practice (2009)	Qualitative interpretive ethnography	Participant observations	Explore nursing students' experiences of peer learning in clinical practice.	General medical and surgical ward clinical settings	UK	13 females and 2 male undergraduate nursing students	N=15 undergraduate nursing students, 13 women and 2 men, age range: 18-45 years.	Thematic analysis	Student nurses exist on the edge of the community of practice (of qualified staff) and therefore form their own parallel community. Students use friendships that they have developed in practice to enable them to learn. Knowledge is contextually bound and not therefore linked to seniority, or length of time served on the course.	Clear outline both the methods and methodology. Offers congruity between these elements and demonstrates clear themes from the analysis to inform the conclusion.
Roberts; D. – Nursing Standard (2008)	Qualitative interpretive ethnography	Participant observation	Explore undergraduate nursing students' experiences of peer learning within the clinical practice environment.	Clinical practice setting	UK	13 Females and 2 male undergraduate nursing students.	N=15 undergraduate nursing students, 13 Women and 2 men, age range: 18-45 years.	Thematic analysis	Friendships were an important aspect of peer learning for the students in the study and friendship fostered learning. Peer learning in the clinical practice setting is an informal and underestimated aspect of clinical learning and is valued by students.	Clear outline of methods and methodology, displaying congruity between methods and the research question.
Sprengel; A.D. Job; L. - Nurse Educator (2004)	Mixed methods	Survey	Undergraduate student nurses' experiences of peer mentoring in the clinical setting in reducing anxiety.	Clinical practice setting	USA	30 undergraduate nursing students	N=30 undergraduate nursing students. 23 aged 18-19. 7 students aged 20.	Unclear, some mention of themes, but there is not clear discussion of data analysis in relation to qualitative data.	Students through peer mentoring experiences verbalise reduced anxiety, reduced confusion and perceive a more positive environment for learning to occur. Peer mentoring encourages greater student responsibility and active learning.	The congruity between the research methodology and the objectives of this study are unclear. This is the same as the conclusions which struggle from the analysis of the data.

Appendix VI: Study findings and illustrations

Ravanipour M, Bahreini M, Ravanipour M. Exploring nursing students' experience of peer learning in clinical practice. J Educ Heath Promot 2015;4(46):1-12.

Finding	Illustrations from study	Evidence
Paradoxical dualism	"When the peer was our classmate, our stress got less; it was easier to talk about our problems to him/her than to the teacher. The teacher could criticize us why we hadn't learned such cases yet. Naturally answering our friends was much easier." (p4)	Unequivocal
Peer exploitation	"The peer's role should be more supervisory than duty performance. One of the problems of my peer was that instead of giving me a chance to do the work, he tried to do all the activities by himself."(p5)	Unequivocal
Peer learning provides first learning efficacy	"The teachers should assess the students individually. However, it would be better if the teachers make a comparative assessment of the students' work with that of their peers; this is due to the fact that some students' group work is better than their individual performance."(p5)	Credible
Socialization practice	"I believe we should train our peer students in a completely sympathetic friendly way to learn something, not teasing the peers for training them. Because if they were to know everything, why would they need to have peers?"(p5)	Unequivocal

Austria MJ, Baraki K., Doig A.K. Collaborative learning using nursing student dyads in the clinical setting. Int J Nurs Educ Scholarsh 2013;10(1):1-8.

Finding	Illustrations from study	Evidence
Positive support from peers	''The first day I was really nervous and even though I had been working with patients for a long time I was still really nervous. It was a new experience and you're a nursing student now it was just good to have someone there, right with you, going through the same thing.''(p4)	Credible
Decreased anxiety and increased confidence	''I kind of liked working in pairs. It kind of helped me not be so scared and helped build my confidence. It's easier to ask a student for help sometimes than an instructor just because they are on the same level as you.''(p4)	Unequivocal
Increased efficiency with tasks	''It's very convenient because they help each other, they help me… it takes two to lift me up, to move me around and that makes it that I don't hurt so bad. Also one leaving gets something that they need, and the other one stays with me, so I thought of that was a convenience…. When	Unequivocal

	they gave me a wipe, a bath, and shampoo, we were able to do it better because one was giving me the shampoo and the other one was scrubbing my feet and, massaging with a cream. I felt very pampered, very pampered and it was a very good experience.''(p5)	
Overwhelming the patient	‘‘They wanted to offer me a bath, they wanted to offer to do anything that had to be done and they just really wanted to help, and when you're feeling kind of, well I had the hiccups, and I kind of liked to just not have to do much.''(p5)	Unequivocal
Difficulty in negotiation of tasks	‘‘I felt, for instance, one of our patients needed their Foley removed and you have to choose who’s going to do it because you both can’t do it. So that was kind of hard because it was like you knew you would really get the full experience of getting to try everything. You had to decide who was going to get to do it (…) I like to do things. I would rather get the opportunity to do everything for that patient rather than sit and watch somebody else do it.''(p5)	Unequivocal
Challenges of student role in dyad	‘‘Since you’re probably doing half of everything, [you] kind of miss out on some of the learning because you’re not doing everything first hand. If there’s a more dominant personality in the pair then that person tends to do more of the talking and take more of the initiative than the other person… But if you tend to let the other person take control then I think it could detract from your personal learning because you don’t do it first hand and so you don’t realize that you are not learning. Sometimes I’ll be watching something and I’ll think like, “Oh yeah, I’m getting this” and then when you go to do it on your own it’s totally different.’’(p6)	Unequivocal
Patient role in student learning	‘‘It was exhilarating, to be someone that could help develop a career…. Almost like a mentor. They asked questions and I gave responses, and I made my responses as an intelligent and verbose as possible, and as detailed as possible, because I understand that these guys as students need to know the right questions to ask, and how to ask the questions.''(p6)	Unequivocal
Clinical instructor has a role to play in student learning	‘‘I think we received more support because of being in a pair so that [the instructor] had less people to run around with. There [were] four groups to kind of follow around and work with rather than eight separate people to keep track of.''(p6)	Unequivocal
Curricular staging for novices	“I think that it’s a good thing when we have such limited experience. When I progress in nursing	Credible

	school it will be nicer to be on my own and fly solo and work with my own knowledge."(p6)	

Harmer BM, Huffman J, Johnson B. Clinical Peer Mentoring. Nurse Educ 2011;36(5):197-202.

Finding	Illustrations from study	Evidence
Improved self-confidence	''I was nervous to have someone follow me around at first. But I ended up feeling more confident knowing that I have someone experienced by my side.''(p.201)	Unequivocal
Time management and prioritization of patient care	''Having to explain why I was doing what I was doing helped me to realize to prioritise better.''(p201)	Unequivocal
Improving clinical judgement	''It was nice to have the (mentor) say, 'you are placing too much emphasis on this and not enough emphasis on that.' That really helped me make better decisions.''(p201)	Unequivocal
Team working and collaboration	''I also improved my communication skills and remembered not to make assumptions about other students' abilities and skills.''(p201)	Unequivocal
Improved understanding of the clinical educator role	''I have a better understanding of how difficult it is to be a clinical instructor. I mentored 2 Students. I couldn't imagine being responsible for 8 students' learning.''(p201)	Unequivocal

Giordana S, Wedin B. Peer mentoring for multiple levels of nursing students. Nurs Educ Perspect 2010;31(6):394–6.

Finding	Illustrations from study	Evidence
Mentees received reassurance from senior mentors	''I felt like I wasn't going to do anything detrimental because if I was about to do something completely wrong someone was there to say, 'Whoa. Don't do that.''(p395)	Unequivocal
Mentees perceive and active role modelling of care	''Wow! I can be that comfortable at some point. To see a student who had been there and gotten it.''(p395)	Unequivocal
Hand on modelling of care from mentors	"You go in and you start doing one thing, and then you put them into your place. And you're like, okay do this. And then you start being their assistant, the extra pair of hands."(p395)	Unequivocal
Affective modelling of care	''She probably taught me as much as I taught her, but still I was able to help theorize things for her and make her more efficient with tasks.'' (p395)	Unequivocal
Teaching how to care	''She was really nervous to do blood pressures, so we just worked on teaching her how to do that.…She was really scared that she had the	Unequivocal

	wrong numbers, so I had to do it behind her….I proved it to her by looking in the chart. I noted she has low blood pressure, she is an older lady.''(p396)	
The teaching role provided a positive change	''So often in the program, we're always put into something new. We're always the new student. We're always the nervous student and there's always someone that knows so much more than us…For once, we got to be the one, the person that knows more.''(p396)	Unequivocal

Christiansen A, Bell A. Peer learning partnerships: exploring the experience of pre-registration nursing students. 2010;19(5-6):803-810.

Finding	Illustrations from study	Evidence
The challenges of initial practice experience	''It was crazy, it was really busy but just coming into the hospital alone, it's massive… loads of people… I felt lost at first and had knots in my stomach.''(p806)	Unequivocal
Gaining acceptance	''You are just pulled in every direction. The auxiliaries want you to do their work with them and you are supposed to be working with the staff nurses and learning something, it is hard to reach a balance.''(p807)	Credible
Learning with peers	''Learning with a peer is not always about skills but sometimes just saying, look it will be alright, things will get better''(p807)	Unequivocal
Personal growth and development	''I felt good when a first year came up to me and said 'thanks I've really learned a lot today, you really did well'… it felt great to get that kind of recognition.''(p808)	Unequivocal

Roberts D. Friendship fosters learning: the importance of friendships in clinical practice. 2009;9(6):367-371.

Finding	Illustrations from study	Evidence
The students develop an 'ask anything' culture where they see each other as valuable sources of information	''Other students are a favourable option for gaining or consolidating your knowledge...you know, you can ask them anything...something five times a day and not feel stupid, as undoubtedly they will have done or will do the same thing to you.''(p369)	Unequivocal
The students see each other as a discrete group which only fellow students can	''When you begin university you are told about all the support available to you, but the most important support network is never mentioned: fellow students. No one can empathise with you like another student can.''(p369)	Unequivocal

understand and so develop their own parallel community to help each other: 'being in the same boat'		
Birds of a feather flock together: students converge together, particularly when they find themselves alone or when their mentors are busy elsewhere	''You find other students, so that you can get into the whole nursing team on the ward.''(p370)	Unequivocal
Knowledge is not necessarily linked to seniority	''Where you are in your training holds no significance since you are often able to offer guidance to a student who is further on than yourself, just as much as you can gain from someone who is less experienced. It depends more on the individual experiences you have as a student and not on the amount of time you've been training.''(p370)	Unequivocal

Roberts D. Learning in clinical practice: the importance of peers. Nurs Stand 2008;23(12):35–41.

Finding	**Illustrations from study**	**Evidence**
Friendship and learning in clinical practice	''I have found the company of fellow students while on clinical placement to be very reassuring. A new placement, whether it is my first or last, is always daunting. Students tend to stick together and swap experiences and anecdotes.''(p37)	Unequivocal
Survival skills	''I don't think it's just technical things – it's not like that, it's just survival skills. It's things I could cope with…you know…on a ward.''(p38)	Unequivocal
Developing clinical skills	''She asked about the BP/TPR [blood pressure/temperature, pulse and respiration] chart which I subsequently described and introduced her to. I found this really useful because it made me re-examine how I had been introduced to the chart on the ward and the way in which it had been explained to me. Describing to another student the basics of blood pressure and pulse, and also the importance of	Unequivocal

	respiratory obs [observations] made me more aware of how important it is to get a sound initial grasp of a subject before feeling able to embark on attempting to understand it further.''(p40)	

Sprengel AD, Job L. Reducing student anxiety by using clinical peer mentoring with beginning nursing students. 2004;29(6):246-250.

Finding	Illustrations from study	Evidence
Improved self-confidence	''It was good to work with a freshman because I felt like I have come a long way and it was a good confidence booster for me.''(p249)	Unequivocal
Reduced anxiety	''The other student was really nice and made me feel more at ease.''(p249)	Unequivocal

Appendix VII: JBI levels of credibility

Level of Credibility	Definition
1. Unequivocal[U]	Relates to evidence beyond reasonable doubt which may include findings that are matter of fact, directly reported/observed and not open to challenge
2. Credible [C]	Those that are, albeit interpretations, plausible in light of data and theoretical framework. They can be logically inferred from the data. Because the findings are interpretive they can be challenged.
3. Unsupported [US]	When 1 nor 2 apply and when most notably findings are not supported by the data.

Appendix VIII: Results of meta-synthesis

Meta-synthesis 1

Findings	Categories	Synthesized findings
Gaining acceptance: 'you are just pulled in every direction. The auxiliaries want you to do their work with them and you are supposed to be working with the staff nurses and learning something, it is hard to reach a balance' (p807)	Navigating the course in clinical practice	**Challenges of clinical practice are mitigated by peer support.** Students reported feelings of being isolated when first coming into the clinical practice environment and struggled to find a balance when working solo as they were often pulled in various directions by other clinical staff. Nursing students appear to naturally find solace and support in forming their own communities and friendships with other student nurses when in clinical practice.
The challenges of initial practice experience: 'it was crazy, it was really busy but just coming into the hospital alone, it's massive… loads of people… I felt lost at first and had knots in my stomach'. (p806)		
Birds of a feather flock together: students converge together, particularly when they find themselves alone or when their mentors are busy elsewhere: ''You find other students, so that you can get into the whole nursing team on the ward." (p370)	Connecting with peers to create bonding and mutual support	
Friendship and learning in clinical practice: 'I have found the company of fellow students while on clinical placement to be very reassuring. A new placement, whether it is my first or last, is always daunting. Students tend to stick together and swap experiences and anecdotes' (p37)		
Learning with peers: 'learning with a peer is not always about skills but sometimes just saying, look it will be alright, things will get better' (p807)		

Socialization practice: "I believe we should train our peer students in a completely sympathetic friendly way to learn something, not teasing the peers for training them. Because if they were to know everything, why would they need to have peers?" (p5)		
The students develop an 'ask anything' culture where they see each other as valuable sources of information: other students are a favourable option for gaining or consolidating your knowledge...you know, you can ask them anything...something five times a day and not feel stupid, as undoubtedly they will have done or will do the same thing to you". (p369)		
The students see each other as a discrete group which only fellow students can understand and so develop their own parallel community to help each other: 'being in the same boat': when you begin university you are told about all the support available to you, but the most important support network is never mentioned: fellow students. No one can empathise with you like another student can" (p369)		

Meta-synthesis 2

Findings	Categories	Synthesized findings
Affective modelling of care: "She probably taught me as much as I taught her, but still I was able to help theorize things for her and make her more efficient with tasks." (p395)	Enhancing knowledge of care	**Peers are role models for enhancing clinical knowledge.** Peers use each other as role models for modelling and enhancing their knowledge of care, although there is some indication of difficulty in defining each other's role when working together.
Curricular staging for novices: "I think that it's a good thing when we have such limited experience. When I progress in nursing school it will be nicer to be on my own and fly solo and work with my own knowledge."(p6)		
Hands on modelling of care for mentors: "You go in and you start doing one thing, and then you put them into your place. And you're like, okay do this. And then you start being their assistant, the extra pair of hands." (p395)		
Improved understanding of the clinical educator role: ''I have a better understanding of how difficult it is to be a clinical instructor. I mentored 2 Students. I couldn't imagine being responsible for 8 students' learning.''(p201)		
Knowledge is not necessarily linked to seniority: "Where you are in your training holds no significance since you are often able to offer guidance to a student who is further on than yourself, just as much as you can gain from someone who is less experienced. It depends more on the individual experiences you have as a student and not on the amount of time you've been training."(p370)		

Mentees perceive an active role modelling of care: ‘‘Wow! I can be that comfortable at some point. To see a student who had been there and gotten it.’’(p395)		
Peer learning provides first learning efficacy: “The teachers should assess the students individually. However, it would be better if the teachers make a comparative assessment of the students’ work with that of their peers; this is due to the fact that some students’ group work is better than their individual performance.” (p5)		
Improving clinical judgement: ‘‘It was nice to have the (mentor) say, 'you are placing too much emphasis on this and not enough emphasis on that.' That really helped me make better decisions.''(p201)		
Time management and prioritization of care: 'Having to explain why I was doing what I was doing helped me to realize to prioritise better.'(p201)		
Challenges of student role in dyad: Since you’re probably doing half of everything, [you] kind of miss out on some of the learning because you’re not doing everything first hand. If there’s a more dominant personality in the pair then that person tends to do more of the talking and take more of the initiative than the other person… But if you tend to let the other person take control then I think it could detract from your personal learning because you don’t do it first hand and so you don’t realize that you are not learning. Sometimes I’ll be watching something and I’ll think like, “Oh yeah, I’m getting this” and then when you go to do it on	Complex choices when sharing learning opportunities.	

your own it's totally different. (p6)		
Difficulty in negotiation of task: 'I felt, for instance, once of our patients needed their Foley removed and you have to choose who's going to do it because you both can't do it. So that was kind of hard because it was like you knew you would really get the full experience of getting to try everything. You had to decide who was going to get to do it (….) I like to do things. I would rather get the opportunity to do everything for that patient rather than sit and watch somebody else do it.'(p5)		
Peer exploitation: "The peer's role should be more supervisory than duty performance. One of the problems of my peer was that instead of giving me a chance to do the work, he tried to do all the activities by himself." (p5)		

Meta-synthesis 3

Findings	Categories	Synthesized findings
Clinical instructor had a role to play in student learning: 'I think we received more support because of being in a pair so that [the instructor] had less people to run around with. There [were] four groups to kind of follow around and work with rather than eight separate people to keep track of.' (p6)	Support and reassuring learning from mentors	**Support and feedback develops competence and confidence and reduces stress and anxiety.** Peer assisted learning provides the necessary support and feedback to peers to enable them to develop their competence and confidence as well as reduce feelings of anxiety and stress.
Mentees received reassurance from senior mentors: 'I felt like I wasn't going to do anything detrimental because if I was about to do something completely wrong someone was there to say, ''whoa. Don't do that.'''(p395)		
Patient role in student learning: 'It was exhilarating, to be someone that could help develop a career…. Almost like a mentor. They asked questions and I gave responses, and I made my responses as an intelligent and verbose as possible, and as detailed as possible, because I understand that these guys as students need to know the right questions to ask, and how to ask the questions.' (p6)		
Personal growth and development: 'I felt good when a first year came up to me and said 'thanks I've really learned a lot today, you really did well'… it felt great to get that kind of recognition'. (p808)		

Decreased anxiety and increased confidence: 'I kind of liked working in pairs. It kind of helped me not be so scared and helped build my confidence. It's easier to ask a student for help sometimes than an instructor just because they are on the same level as you. (p4)	Increasing confidence/reducing anxiety and stress.	
Paradoxical dualism: "When the peer was our classmate, our stress got less; it was easier to talk about our problems to him/her than to the teacher. The teacher could criticize us why we hadn't learned such cases yet. Naturally answering our friends was much easier." (p4)		
Improved self-confidence: 'I was nervous to have someone follow me at first. But I ended up feeling more confident knowing that I have someone experienced by my side.'(p.201)		
Improved self-confidence: 'It was good to work with a freshman because I felt like I have come a long way and it was a good confidence booster for me.'(p249)		
Positive support from peers: 'The first day I was really nervous and even though I had been working with patients for a long time I was still really nervous. It was a new experience and you're a nursing student now it was just good to have someone there, right with you, going through the same thing.' (p4)		
Reduced anxiety: 'The other student was really nice and made me feel more at ease.'(p249)		

The teaching role provided a positive change: 'So often in the programme, we've always put into something new. We're always the new student. We're always the nervous student and there's always someone that knows so much more than us…For once, we got to be the one, the person that knows more.''(p396)		
Developing clinical skills: 'She asked about the BP/TPR [blood pressure/temperature, pulse and respiration] chart which I subsequently described and introduced her to. I found this really useful because it made me re-examine how I had been introduced to the chart on the ward and the way in which it had been explained to me. Describing to another student the basics of blood pressure and pulse, and also the importance of respiratory obs [observations] made me more aware of how important it is to get a sound initial grasp of a subject before feeling able to embark on attempting to understand it further.' (p40)	Complimentary learning aids Clinical skill development	
Increased efficiency with tasks: ''It's very convenient because they help each other, they help me… it takes two to lift me up, to move me around and that makes it that I don't hurt so bad. Also one leaving gets something that they need, and the other one stays with me, so I thought of that was a convenience…. When they gave me a wipe, a bath, and shampoo, we were able to do it better because one was giving me the shampoo and the other one was scrubbing my feet and, massaging with a cream. I felt very pampered, very pampered and it was a very good experience.''(p5)		

Overwhelming the patient: Well, they wanted to offer me a bath, they wanted to offer to do anything that had to be done and they just really wanted to help, and when you're feeling kind of, well I had the hiccups, and I kind of liked to just not have to do much.' (p5)		
Survival skills: ‘‘I Don’t think it’s just technical things - it’s not like that, it’s just survival skills. It’s things I could cope with…you…on a ward.’(p38)		
Teaching how to care: “She was really nervous to do blood pressures, so we just worked on teaching her how to do that.…She was really scared that she had the wrong numbers, so I had to do it behind her.…I proved it to her by looking in the chart. I noted she has low blood pressure, she is an older lady.” (p396)		
Team working and collaboration: 'I also improved my communication skills and remembered not to make assumptions about other students' abilities and skills.'(p201)		

Appendix IX: Approval letters for ethics and research sites

Ethics approval letter for site one

Plymouth University
Faculty of Health, Education and Society
Health Student Ethics Sub-Committee
APPLICATION FOR ETHICAL APPROVAL OF RESEARCH
Review Panel: Chair's action on resubmission

Evaluate the impact of peer assisted learning amongst undergraduate paediatric nursing students in the clinical environment.

Student Name(s): … Matt Carey .....

Course/Programme for which project is being carried out:.....Research Master in Applied Healthcare.....

Email address(es) and other contact details:…matthew.carey@plymouth.ac.uk
Supervisor/Chief Investigator/Independent researcher Name: …Professor Bridie Kent

Dear Matt
Thank you for your resubmitted Ethics application. I can see you have addressed all the comments and have shown evidence of an honorary contract with the trust. I note that RCHT R&D approval can only be obtained when you have ethical approval for this committee. Therefore you application to this committee is approved.

- Approved, permission to commence research granted.

On the condition that you forward the RCHT R&DI approval letter to us when you have it.

- Wishing you every success with your studies.

Kind Regards

Graham
Dr Graham R Williamson
Chair, Health Student Ethics Committee
Faculty of Health, Education and Society
Email: gwilliamson@plymouth.ac.uk

NHS approval letter for site one

One + all | we care

Royal Cornwall Hospitals NHS
NHS Trust

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Truro
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cornwall.research@cornwall.nhs.uk

Dear Matt Carey,

7th May 2015

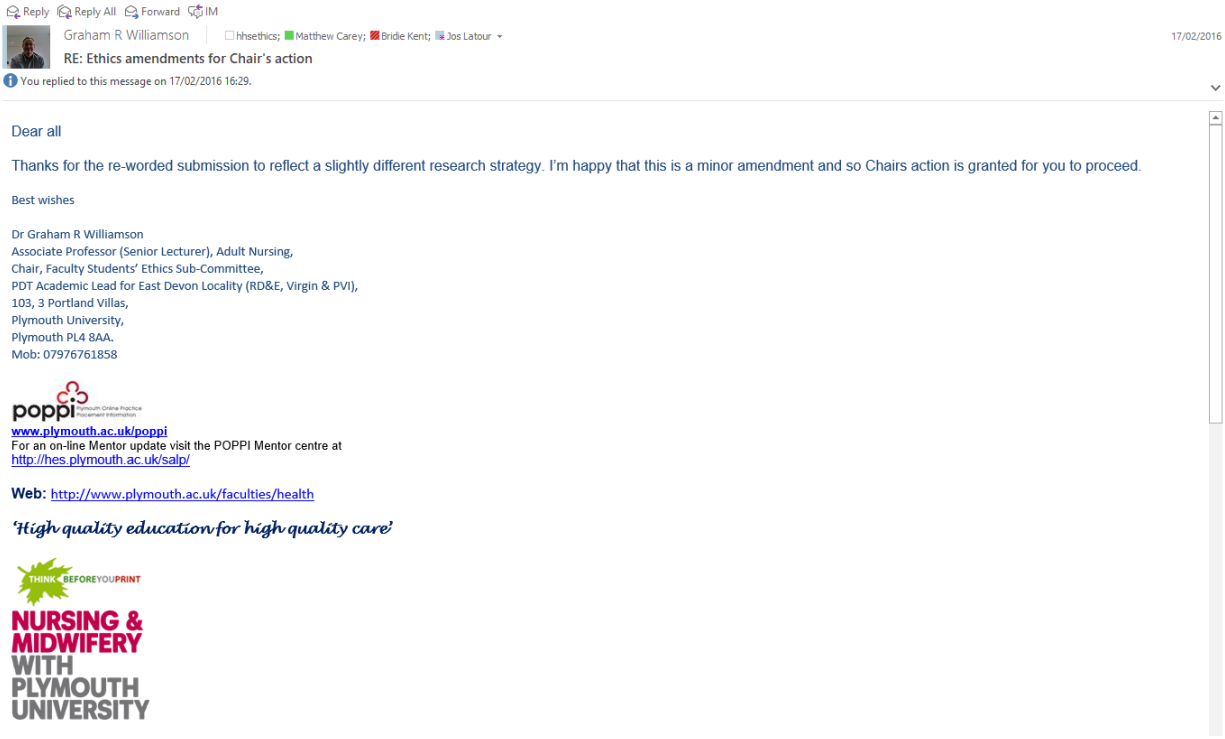
Re: Evaluate the impact of peer assisted learning amongst undergraduate paediatric nursing students in the clinical environment

Many thanks for providing details about your project. This has been independently reviewed by members of the RD&I, Research Pathways Group. The members are in agreement that this project is classified as research. We would like to take the opportunity to offer our full support to assist the smooth running of this research project. Please contact the R&D Clinical Trials Co-ordinator Sharon.northey@rcht.cornwall.nhs.uk who will assist you through the permissions process.

Yours sincerely,

Dr Nick Morley
RD&I Assistant Research Manager

Ethics approval for site two



Reply Reply All Forward IM

Graham R Williamson | hhsethics; Matthew Carey; Bridie Kent; Jos Latour | 17/02/2016

RE: Ethics amendments for Chair's action

You replied to this message on 17/02/2016 16:29.

Dear all

Thanks for the re-worded submission to reflect a slightly different research strategy. I'm happy that this is a minor amendment and so Chairs action is granted for you to proceed.

Best wishes

Dr Graham R Williamson
Associate Professor (Senior Lecturer), Adult Nursing,
Chair, Faculty Students' Ethics Sub-Committee,
PDT Academic Lead for East Devon Locality (RD&E, Virgin & PVI),
103, 3 Portland Villas,
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Plymouth PL4 8AA.
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NURSING & MIDWIFERY WITH PLYMOUTH UNIVERSITY

NHS approval letter site two

Plymouth Hospitals NHS
NHS Trust

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19/10/2016

Mr Matthew Carey
Lecturer in Nursing: Child Health
Plymouth University
Room 103, 8 Portland Villas
PLYMOUTH, PL4 8AA

Dear Mr Carey

RE: **Confirmation of Capacity and Capability at Plymouth Hospitals NHS Trust to deliver the study referenced below.**

IRAS: **182733**
Eudract: **N/A**
MREC: **N/A**
UKCRN: **N/A**
R&D ref: **16/P/087**

Study title: Evaluating the impact of peer assisted learning in practice.

This letter confirms that the study named above has Plymouth Hospitals NHS Trust (PHNT) R&D Confirmation of Capacity and Capability to proceed.

It is your responsibility to ensure that all research study team members have up-to-date GCP training (renewable every two years). This is a mandatory requirement at PHNT. Please also ensure that R&D have copies of up-to-date research CV's for all members of staff identified on the delegation log.

Yours sincerely,

Dr Chris Rollinson
Research Governance Manager

HRA approval letter

Health Research Authority

Bridie Kent
Professor in Leadership in Nursing, Plymouth University Hon.
Associate Director of Nursing, RCHT
University of Plymouth
Room 214
8 Portland Villas
Plymouth
PL4 8AA

Email: hra.approval@nhs.net

09 September 2016

Dear Professor Kent

Letter of HRA Approval for a study processed through pre-HRA Approval systems

Study title:	**Evaluate the impact of peer assisted learning amongst undergraduate paediatric nursing students in the clinical environment**
IRAS project ID:	**182733**
Sponsor	**University of Plymouth**

Thank you for your request for HRA Approval to be issued for the above referenced study.

I am pleased to confirm that the study has been given **HRA Approval.** This has been issued on the basis of an existing assessment of regulatory compliance, which has confirmed that the study is compliant with the UK wide standards for research in the NHS.

The extension of HRA Approval to this study on this basis allows the sponsor and participating NHS organisations in England to set-up the study in accordance with HRA Approval processes, with decisions on study set-up being taken on the basis of capacity and capability alone.

If you have submitted an amendment to the HRA between 23 March 2016 and the date of this letter, this letter incorporates the HRA Approval for that amendment, which may be implemented in accordance with the amendment categorisation email (e.g. not prior to REC Favourable Opinion, MHRA Clinical Trial Authorisation etc., as applicable). If the submitted amendment included the addition of a new NHS organisation in England, the addition of the new NHS organisation is also approved and should be set up in accordance with HRA Approval processes (e.g. the organisation should be invited to assess and arrange its capacity and capability to deliver the study and confirm once it is ready to do so).

Participation of NHS Organisations in England

Please note that full information to enable set up of participating NHS organisations in England is not provided in this letter, on the basis that activities to set up these NHS organisations is likely to be underway already.

The sponsor should provide a copy of this letter, together with the local document package and a list of the documents provided, to participating NHS organisations in England that are being set up in accordance with HRA Approval Processes. It is for the sponsor to ensure that any documents provided to participating organisations are the current, approved documents.

For non-commercial studies the local document package should include an appropriate Statement of Activities and HRA Schedule of Events. The sponsor should also provide the template agreement to be used in the study, where the sponsor is using an agreement in addition to the Statement of Activities. Participating NHS organisations in England should be aware that the Statement of Activities and HRA Schedule of Events for this study have not been assessed and validated by the HRA. Any changes that are appropriate to the content of the Statement of Activities and HRA Schedule of Events should be agreed in a pragmatic fashion as part of the process of assessing, arranging and confirming capacity and capability to deliver the study. If subsequent NHS organisations in England are added, an amendment should be submitted to the HRA..

For commercial studies the local document package should include a validated industry costing template and the template agreement to be used with participating NHS organisations in England.

It is critical that you involve both the research management function (e.g. R&D office and, if the study is on the NIHR portfolio, the LCRN) supporting each organisation and the local research team (where there is one) in setting up your study. Contact details and further information about working with the research management function for each organisation can be accessed from www.hra.nhs.uk/hra-approval.

After HRA Approval

In addition to the document, *"After Ethical Review – guidance for sponsors and investigators"*, issued with your REC Favourable Opinion, please note the following:

- HRA Approval applies for the duration of your REC favourable opinion, unless otherwise notified in writing by the HRA.
- Substantial amendments should be submitted directly to the Research Ethics Committee, as detailed in the *After Ethical Review* document. Non-substantial amendments should be submitted for review by the HRA using the form provided on the HRA website, and emailed to hra.amendments@nhs.net.
- The HRA will categorise amendments (substantial and non-substantial) and issue confirmation of continued HRA Approval. Further details can be found on the HRA website.

The HRA website also provides guidance on these topics and is updated in the light of changes in reporting expectations or procedures.

Scope

HRA Approval provides an approval for research involving patients or staff in NHS organisations in England.

If your study involves NHS organisations in other countries in the UK, please contact the relevant national coordinating functions for support and advice. Further information can be found at http://www.hra.nhs.uk/resources/applying-for-reviews/nhs-hsc-rd-review/.

If there are participating non-NHS organisations, local agreement should be obtained in accordance with the procedures of the local participating non-NHS organisation.

User Feedback

The Health Research Authority is continually striving to provide a high quality service to all applicants and sponsors. You are invited to give your view of the service you have received and the application procedure. If you wish to make your views known please email the HRA at hra.approval@nhs.net. Additionally, one of our staff would be happy to call and discuss your experience of HRA Approval.

HRA Training

We are pleased to welcome researchers and research management staff at our training days – see details at http://www.hra.nhs.uk/hra-training/.

If you have any queries about the issue of this letter please, in the first instance, see the further information provided in the question and answer document on the HRA website.

Your IRAS project ID is **182733**. Please quote this on all correspondence.

Yours sincerely

HRA Approval Team

Email: hra.approval@nhs.net

Copy to: *Professor Patricia Livsey Patricia Livsey, Plymouth University*
Melanie Gilbert, Royal Cornwall Hospital Trust
Professor Bridie Kent, University of Plymouth

IRAS project ID	182733

Appendix X: Overview of main findings and sub-themes

Introduction

Appendix IX contains an overview of the main findings across all stages of data collection within phase two of the research process. The three stages take into consideration data that were collected and analysed across the two sites and with all three participant groups. The data are presented using the 13 sub-themes and main themes that were developed through the framework process as displayed within the developed framework model (Figure 3) with examples taken across all stages of study to offer representation from both sites and all three participant groups.

Theme one: Peers as facilitators to develop learning when engaging in peer-assisted learning (PAL)

Theme one (see figure 12) was developed from the categorisation of five of the 13 subthemes developed from the framework analysis. This theme conveys the positive acknowledgement of interactions with peers acting as informal facilitators of learning. This captures the types of interactions that occur when student nurse peers are engaged in peer-assisted learning, but also shows examples of regular interactions that create opportunities to optimise education amongst peers. These are reflected through the sub-themes to create a system of informal teaching, the openness to asking questions and seek advice as well as development of discussion related to clinical and academic assessment.

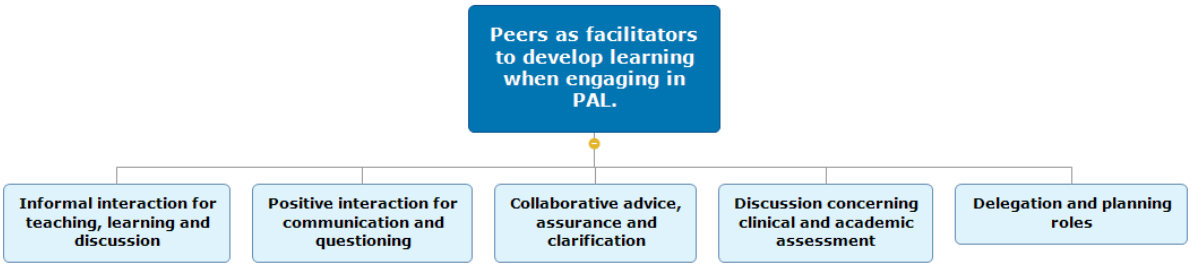

Figure 12: Theme one and sub-themes

Sub-themes:

- Informal interaction for teaching, learning and discussion
- Positive interaction for communication and questioning
- Collaborative advice, assurance and clarification
- Discussion concerning clinical and academic assessment
- Delegation and planning roles

Sub-theme one: Informal interaction for teaching, learning and discussion

During the period of observations, it was noted how peers, within their interactions with other peers, would often engage in providing one another with informal instruction and guidance in order to develop their learning and understanding of the situation or task. Frequently, this was based around basic instructions needed to complete a clinical task, such as making a bed, administration of medicines or using devices and equipment. These interactions were noted among all pairings of student peers from both fields of nursing. This included peers of equal level of study as well

as senior to junior paring, where students may have two or even one years difference in their current stage of learning:

> Data entry: Junior student nurse along with the support of senior third year student nurse and helps to administer an adrenaline nebuliser to the patient. The senior peer observes her junior colleague who is on her knees to reach the patient on its mother's lap. Senior peer offers some general tips and advice on the best technique to help her junior colleague with delivering the medication to the patient. Senior peer offers rationale within this to justify the action as well as guiding her through the process: *'It's best if the child is sat up as they will breathe in the neb more effectively. Also you can angle it better to they get the whole drug and not part.'* [S2,CH3,W3] *'Like this?'* [S2,CH2,W3] *'yep, you may have to support the holding of it (neb), but its important they get all of it as some may be lost if not.'* [S2,CH3,W3]

The structure of learning between peers and the opportunities for teaching were not restricted to only occurring when providing care or daily task. In some observations, student nurses were seen to provide formal teaching and discussion within ad hoc teaching sessions. In one example, a senior peer created the opportunity to facilitate learning for their junior colleagues. Interestingly, this opportunity encouraged more than one junior peer on the same shift to involve themselves in the process. Within this informal teaching, the third year peer took on a natural role of providing informal instruction to the three accompanying first year students:

Data entry: Before the teaching session begins, final year student nurse discusses with the first year student pair their recognition of the importance of hand washing and how much they remember of the seven step technique from their first year clinical skills sessions: *'it's important to know how to wash your hands effective and reduce infection risk. You would have done the seven steps in your skills session, so let's see what you remember.'* [S1,CH1x2,CH3, W5].

Sub-theme two: Positive interaction for communication and questioning

The frequency and engagement of peers in practice appeared to be encompassed within positive interactions for communication. There was evidence of communication and questioning amongst interactions between junior and senior peers, however, these also existed between peer pairs within the same stage of the programme. Students were noted to frequently engage in open communication related to clinical practice and to use questioning to confirm understanding of the topic or task in question:

'Both students equally share information with one another about each of the patients. Each student appears to be assigned different patients to support and therefore, they take it in turns to give each other this brief overview of each-others patients. Students use a handover/communication tool known as SBAR. Students demonstrate skills in their handover and acknowledgement is given by each students to determine when they have understood the information that has been communicated: *'I wondered if we go through the*

handover together?' [S1,CH1,W4] *'Yep, fine if we use SBAR and go through each patient we are looking after.'* [S1,CH1,W4].

Thus communication and questioning was important for peers. Peers from all levels of study across sites and participant groups were noted to approach each other openly and frequently appeared to ask each other questions:

> Data entry: It appears that the students know each other well and can approach ad hoc to ask each other questions with ease. *'Can I pick your brains over the jobs that needed completing for patient (X)?'* [S2,AD1,W6]. *'Yeah of course, let me see.'* [S2,AD1,W6]. The students at the end of this conversation state a point that describing the importance of this communication process for asking questions: *'I'm glad you are about to ask this, as some things you wouldn't want to ask your mentor or another nurse.*'[S2,AD1,W6].

Sub-theme three: Collaborative advice, assurance and clarification

The interaction between peers led to a need to seek guidance from another peer. There appeared to be an openness of peers in their ability to seek this guidance informally, but also a general acceptance from their peer colleagues to providing this form of support. Although this phenomenon was seen across multiple sites and participant groups, it occurred more frequently in groups of first and second year students when seeking guidance from a senior colleague, or from a peer at the same level of study. These were often linked to general clinical discussion, but also when

seeking advice and assurance about general conduct and clinical tasks whilst in clinical practice:

> Data entry 24: First year openly seeks advice and clarification to peer first year peer colleague about how to apply a blood pressure cuff, from which the student offers some directions: *'I need some help with this cuff. I don't know if it is too small, or why it won't work?'* [S1,CH1,W2]. Some nice smooth open collaboration amongst the two students: *'The size is fine, but I think the connection is wrong, try another one off the other obs machine.'* [S1,CH1,W2]. First year student seeks further clarification on the use of the monitor, (which she appears unfamiliar with): *'I have connected it to machine, but which button do I press to inflate it?'* [S1,CH1,W2]. Advice that is provided is clear and positive: *'No worries, see the button on the right with the arm image. Click that one and wait for a sec.'* [S1,CH1,W2].

Many of the peers who worked together had a task-focused approach to peer learning whereby daily clinical activity encouraged the support from other peers. Within these tasks, peers were noted to collaborate and seek advice, assurance and clarification in relation to actions with one another. This was seen across all sites and participant groups, but was most prominent between students from the field of adult nursing. Situations for seeking advice and guidance were openly pursued and became part of most tasks and situations when interacting together. These occurrences existed between senior to junior peer interactions, as well as between students from the same level of study:

Data entry: Student are located at the nurses' station. The junior student nurse appears to have been waiting for the return of one of the other senior peers, so that she can ask her for some advice about a patient: *'I am not sure what to do next, when to move (the patient)?'* [S2,AD2,W7]. *'I would give her a few minutes then give them a check to see if they are okay.'* [S2,AD3,W7]. The junior students seems receptive of the answer, however, the senior peer goes one step further to go with the junior student to the patients area to complete the check and show her through direction the advice she provides.

Sub-theme four: Discussion concerning clinical and academic assessment

The data clearly revealed the presence of general discussion and support amongst peers related to completing their clinical competencies. These competencies are linked to the formal assessment of student clinical practice whilst in clinical placement set by the standards of the university and governing nursing body (Nursing and Midwifery Council, 2010). These interactions were noted on multiple occasions, in which peers, including those new to their experience of clinical practice were keen to discuss and seek support with the peers regarding the assessment of practice:

Data entry 20: Students openly talk about their competencies and what they need to achieve in different areas: *'What competencies do you think are best left for the ward and what should I leave for the community?' [*S1,CH1,W1] Within this conversation they collaborate and discuss about what's important in relation to what has to be signed off and use peer interaction whereby

student A and B actively working together to achieve a particular competency in relation to drug calculations and medicines administration: *'This clinical one related to drawing up meds etc. We can look to do this together if you like?'* [S1,CH1,W1].

These conversations often unfolded within dyads of peers that were from the same level of study. Junior student nurse peers, as part of establishing where they fit into clinical practice, would consider that an important topic was to discuss their clinical assessments in the periods between clinical activity. Interestingly, similar discussions were also captured between senior third-year students from the same level of study. Students would openly discuss their clinical competencies and relate the assessment criteria to clinical practice:

Data entry: Senior students discuss about their assessment paperwork and their ongoing achievement record. Interestingly, the two students are able to identify and acknowledge the help that they have provided one another to help each one understand the process required for completing their development plans. They discuss what competencies they believe relates to practice and how they can relate this to their current placement: *'If we look at the first domain, communication, this relates to all things we do in placement.'* [S2,CH3,W4] *'I agree, but I think there are different expectancies for third years, like, breaking bad news. This is something we're likely to come across in HDU (High Dependency Unit).'* [S2,CH3,W4].

Clinical and academic assessments were not only observed between peers of the same level of study, but also when the support and input was offered by senior student nurses who, having gone through the process, were very open to offer their experiences and views to their junior colleagues:

> Data entry: Senior student nurse in discussion with second year peer colleague linked to clinical competencies and assessment. Mentions some of the individual points that need to be achieved and provides to her colleague some background information: *'It might be helpful for you to see some examples and happy to share these and take note of how I have approached these competencies.*' [S2,AD3,W7] It is noted that this so that when it comes to the junior student doing this herself that she will have a bit more of an understanding of the process. This is acknowledged as being helpful by the junior student as she described that this is her first ward/clinical practice placement and it's important for her to gain a bit of understanding about what types of competencies are expected to be achieved in such a placement area: *'This placement is my first acute area and I still find it hard to know which assessments to achieve?'* [S2,AD2,W7].

Sub-theme five: Delegation and planning roles

The importance of assigning a role or delegating a task was presented as an open and fluid discussion between peers with equal sharing of thoughts and ideas when engaging with PAL. Within these discussions, peers were able to plan the task to be

completed by defining the parameters and ensuring through effective communication that each person was clear on their role:

> Data entry: First year student nurse delegates to her first year peer colleague to ask if they could undertake the observations of vital signs on their behalf whilst they will focus on the paperwork and discussion aspect: *'Do you want to do the obs for this next patient and I will write them down on the PEW chart?'* [S1,CH1,W2] *'Yeah, that's fine.'* [S1,CH1,W2] This is discussed by the nurses' station and roles are delegated prior to meeting with the patient. The students at this stage appears to work together as a team and ensure that they are both clear on their tasks, which is clarified and confirmed by both students: *'So I will do the resps, sats and heart rate, and you will help with the B.P. (blood pressure)?'* [S1,CH1,W2] *'Yep, lets go for it.'* [S1,CH1,W2] Students mention about the importance of the need to meet both the needs of the child and the parent when they come to meet with them to conduct the assessment: *'Parents may have questions, which we should address as we do the assessment.'* [S1,CH1,W2] *'Sure thing.'* [S1,CH1,W2].

These incidences were observed across different site and participant groups. The delegation of tasks and roles revealed the leadership roles taken on by the more senior student. However, even in equal pairings, with students at the same level of experiences, there was always one peer among the pair who clearly demonstrated natural skills of decision making, taking on a leadership role:

Data entry: The task is undertaken with effective communication with the senior student nurses providing clarification for action and further instruction when completing the task. Delegation is provided by their peer colleague who takes on a natural role of delegation and leadership: '*If you start with bedspace 1 and I will do 3 and 4. I need to move my patient and refit their prongs, so come give me a hand when you've finished and you can see how to do it.'* [S2,CH3,CH3,W3].

Theme two: Working together as peers to develop clinical practice and deliver care

Theme two (see figure 13) was developed from the categorisation of five of the 13 subthemes developed from the analysis process as can be seen within the framework matrix diagram (Figure 3). This theme further considers the active and positive relationships that were noted as forming between the student nurses as they engaged in peer-assisted learning. The context of learning within this theme provides an overarching example of where peer interactions shape the development of their own clinical practice. It also demonstrated how learning and development, through positive peer-assisted learning, is implemented within clinical practice to deliver effective care.

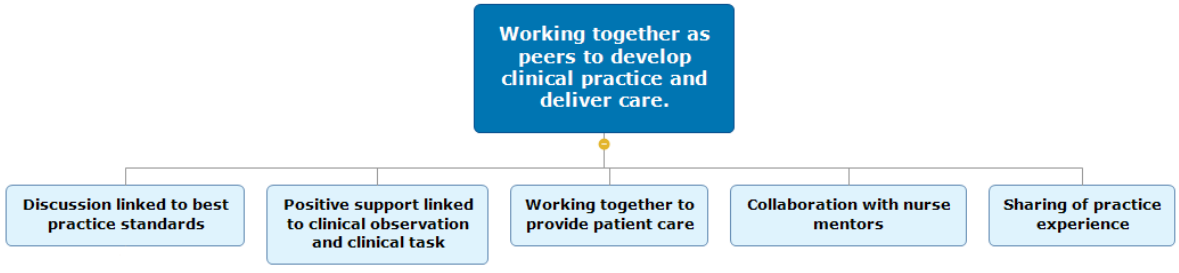

Figure 13: Theme two and sub-themes

Sub-themes:

- Discussion linked to best practice standards
- Positive support linked to clinical observation and clinical task
- Working together to provide patient care
- Collaboration with nurse mentors
- Sharing of practice experience

Sub-theme one: Discussion linked to best practice standards

Students when engaging in conversation with their peers would often discuss standards for providing best practice. These discussions were related to daily clinical tasks, such as documentation and maintaining confidentiality, however, nearly all occurrences noted were related to prioritizing the needs of patients:

> Data entry: Two second year students are talking through patients on the admissions board and trying to discuss what priority of needs they must address at this current point in time. Each student gives each other a brief history or overview of the patients linked to their condition or need to come to the CAU, which would fit with the need to prioritise care and maintain best standards of practice: *'If a child is sick, then we need to prioritise that one first, even if they have only just come in. For instance, this child was admitted with low sats (oxygen saturations). We can't ignore that.'* [S2,CH2,W4].

Patient care was central to most of the discussion and student peers were observed to have fluid and open dialogue in some of the periods between clinical tasks. These times provided the students with the opportunity to refresh their knowledge and consider best practice standards in relation to topics related to the clinical area:

> Data entry: Junior student nurse is in discussion with a third year student nurse considering the topic of restraint on patients with mental health needs. The students are discussing the various principles that relate to restraint and what they need to consider as best practice when it comes to their roles as students: *'Like, restraint can be physical. Sometimes we can use the drug Peridol'.* [S2,AD3,W6] *'What that?'* [S2,AD1,W6] *'Its an anti-psychotic. It can be used to sedate them, right.'* [S2,AD3,W6] *'I've not seen it used that often.'* [S2,AD1,W6] *'we often need to check who has attended physical training before using restraint…ask questions like: is a bed rail in place? Are they mildly aggressive?'* [S2,AD3,W6] *'right, yeah.'* [S2,AD1,W6] *'any factors that may add to this.'* [S2,AD3,W6].

Sub-theme two: Positive support linked to clinical observation and clinical task

Actions undertaken by students when engaging in peer-assisted learning centred around the need to support each other with undertaking clinical observations and clinical tasks. Patient observations were one activity that was noted many times, which took into consideration the task required as well as the assessment process:

> Data entry: Second year student nurses discuss with each other, the tasks that they wish to assign with open communication used. One advances her request to undertake observations on the child whilst the other agrees to take on the role of completing the general questionnaire/patient admission documentation and speaking directly with the family/carers: *'Are you happy if I do the obs and you go through the assessment with the parent?'* [S2,CH2,W4] *'That's fine, lets swap when the next one comes in.'* The students agree this at the nurses' station before taking the parents and child to the triage room on CAU (Children's Assessment Unit).' [S2,CH2,W4].

The support that was provided by peers, linked to clinical observations and clinical tasks, was seen across all site and participant groups. Sometimes peers were called away to complete separate tasks by the nursing staff and yet, given the opportunity, support was extended by peers when they were able to reconvene:

> Data entry: First year student nurses approaches a senior student nurse working on the adolescent ward and asks them if they want any help with some of their clinical tasks. The support is welcome with them both agreeing to undertake some patient observations: *'Do you want a hand with anything?'* [S1,CH1,W1] *'I've got to do some observations for 10:00 if you want to give me a hand?'* [S1,CH3,W1] *'Sounds good.'* [S1,CH1,W1].

Sub-theme three: Working together to provide patient care

Students engaging in peer-assisted learning were observed, as part of their roles and clinical duties within the practice setting, to provide care to patient. This was demonstrated in part through observation and clinical task, however, peers would also discuss the care being provided to patients and review their actions to further their knowledge in this area:

> Data entry: Two second year student nurses on the adolescent ward both located in the treatment area behind the nurses' station. Students enter into a general conversation about the condition of the child in questions related to their observations that they have taken together. They discuss the changes in their observations and how this might relate to the clinical condition that they have come in with: *'So her sats (oxygen saturations) have improved with oxygen, but let's check again in an hour.'* [S2,CH2,W1] *'Her breathing is better and her heart rate has come down.'* [S2,CH2,W1].

Working together to provide patient care was an integral activity for all student nurses who engaged in peer-assisted learning across all sites and participant groups. As part of this sub-theme, discussions between peers of equal stage, or senior to junior, centered on their interactions with patients to include planning care. This became a key aspect of peer-assisted learning; however, it appeared to be considered more frequently as part of the daily clinical routine amongst adult nursing students:

Data entry: Two second student nurses are involved in putting a patient onto the commode. Once this has been established and undertaken by the pair, the two junior students discuss the next part of the process to establish when they need to next intervene: *'Do you think we should go with 10 minutes or half an hour?'* [S2,AD2,W7] *'Hmm, we could go with… if we try 10 minutes and then go for half an hour.'* [S2,AD2,W7] *'10 minutes makes sense, half an hour could be bit of a danger…?'* [S2,AD2,W7] *'Yeah, we should plan to check on her at intervals'* [S2,AD2,W7] *'Yeah…we'll do that'* [S2,AD2,W7] *What size pad do we need'* [S2,AD2,W7] *'Don't worry, I've got one'* [S2,AD2,W7] *'Ideal, okay so just got to wait.'* [S2,AD2,W7].

Sub-theme four: Collaboration with nurse mentors

When observing engagement in peer-assisted learning, it was clear that contact with mentors was important. In these situations, mentors were often sought out as part of a process to clarify previous peer discussions. Their role was usually to confirm actions that were undertaken or about to be undertaken by peer pairs. It was during these interactions, when peer knowledge reached its limit, that further guidance from mentors would be sought:

Data entry 89: Student decide that as there is unclear information to seek guidance from one of the registered nurses at the nurses station…Collaboration between first year student nurses and one of the qualified nurse mentors to seek clarification on aspects of the observations they have taken in relation to respiration: *'We noticed that the child's*

respiratory rate was high, but that's because they were screaming.' [S1,CH1,W4] *'Yeah, we have recorded it, but wanted to check this is okay?'* [S1,CH1,W4]. Mentor clarifies the accuracy of their query and encourages them to make this as a note on the observation chart.

Sub-theme five: Sharing of practice experience

The sharing of practice experiences amongst student nurses was seen to be an important aspect of interactions amongst peers. Student peers were regularly observed entering into conversations whereby the context for discussion related to the opportunity to share their own experiences of practice, seeking to confirm previous knowledge and adding to this through shared experiences. Such sharing of clinical knowledge was seen within a variety of interactions during PAL:

Data entry: Third year student nurses based upon the children's high dependency unit are talking about patients with respiratory condition. This leads into a conversation about patients with whooping cough. One of the third year students discusses with their colleague about the significance of the cough: *'the baby in bed space one with the whooping cough, they came in with what they thought was a bronc, but would get herself into coughing fits and struggle to get her breath back…its interesting, because I recognised the cough (audio) that was played to us in class, in a lecture in first year.' 'in uni, they played different types of coughs' 'O, yeah'.'*

Interestingly these types of observations were not commonly noted among the PAL with adult student nurses. The sharing of practice experience amongst peers from the field of child health appeared to extend beyond pairs, for example, when multiple students were on the same shift they would get together and share examples of previous or current practice experiences::

> Data entry: First year student peer pair talk to each other and consider the value of sharing knowledge from their different clinical areas: *'It's great to share what you have learnt in the other areas, as I am there next, but it stops it from being scary.'* [S1,CH1,W2] One student has seen one particular condition, respiratory condition and the other student hasn't seen a lot so it has been helpful sharing that knowledge: *'I never saw much respiratory illness in the community. Its good you have seen these things, as it helps me to understand what I need to be doing.'* [S1,CH1,W2] Another first year student nurse who is nearby and interested in the conversation involves herself to share in their experience around similar situations when it comes to children with eating disorders and also sharing the experience of things around day case surgery so student A has seen a lot of children with tonsillectomies and grommets where the other student has seen none at all so it is good to have that input: *'I have seen a lot of pre and post op care and you've worked with more CAMHS (Child and Adolescent Mental Health Service) patients, so it will help to share some of those experiences.'* [S1,CH1,W2].

Theme three: positive support and interaction from peers to enhance networking and develop working structure

Theme three (see figure 14) was developed from the categorisation of three of the 13 subthemes developed from the analysis process as can be seen within the framework matrix diagram (figure 3). The focus of this theme focuses on reflecting the context of peer interactions within the clinical environment. Meaningful support emanated from participants along with examples of the contribution of peer-assisted learning for networking and developing a working structure when in clinical practice.

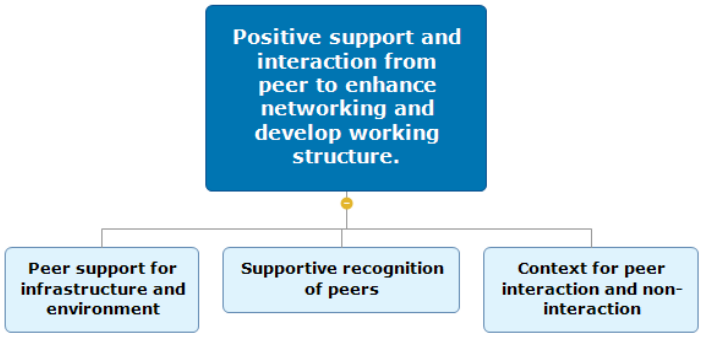

Figure 14: Theme three and sub-themes

Sub-themes:

- Peer support for infrastructure and environment
- Supportive recognition of peers
- Context for peer interaction and non-interaction

Sub-theme one: Peer support for infrastructure and environment

Peer support was highly evident within junior peers groups, with students providing the guidance for navigating around the clinical area. These interactions were often used as opportunities to establish a better understanding of the working structure in the clinical setting, but they also appeared to be used to clarify where they fit into their role as student nurses. There was a sense of comfort gained from this as evident in the following extract of data:

> Data entry: First year student nurses engaging in peer-assisted learning find that support is valuable when it comes to how to navigate within the clinical area. Students use these opportunities to take them around the clinical area: *'If I take you around and show you everything and ask any questions.'* [S1,CH1,W5] *'That's great thanks, I feel more comfortable knowing where I need to be and where to get stuff if asked.'* [S1,CH1,W5].

Peers saw the value and need for support linked to navigating the clinical environment and this became part of regular discussion amongst peers when engaging in peer-assisted learning. Thus it was considered an essential part of setting into the clinical setting within the first few weeks of placement for many of the first and second year students, but potentially less so for more senior students, considering the limited examples within the data:

> Data entry: It appears that that support is relatively vital for these first year student nurses at this stage considering the competence that you need to display in practice early on. Also thinking about this in terms of the first few

weeks of placement students value the support of other peers to ensuring that they get themselves up to speed: ‘I struggle to know what’s expected of us as students, but it helps to have this time to help understand where we fit.’ [S1,CH1,W2]. ‘I know what you mean.’ [S1,CH1,W5].

Sub-theme two: Supportive recognition of peers

Within observations across all sites and participant groups, it was clearly noted how peers had a positive recognition and awareness of their peer colleagues and the support they provided when engaging in peer-assisted learning in the clinical practice setting. The expression of support emanated from what was perceived as mutual respect and recognition by a community of peers who were in the same boat as each other. Additional to this, it was noted how peer engaging in peer-assisted learning offered emotional support and opportunities for offloading stress, which was considered beneficial:

> Data entry: A conversation between two third year students is observed. Students are talking about the support they have been able to provide their peers throughout the placement in relation to challenging situations they have seen. Student ‘T’ states that working with her colleague has enabled her to feel supported and rely on their guidance when faced with a challenging situation: *‘Some of what you see is new and quite intimidating. It’s good to have some support and to ask you and the guys (other peers) questions or for help if I need it.’* [S2,CH3,W3]. *‘Yeah, this area is stressful, but it helps to have that debrief when you have gone through the same thing.’* [S2,CH3,W3]. The

situation the third year peers describes relates to some of the challenges of working in the High Dependency Unit.

It was clear that peers were able to anticipate when a peer colleague required support; this was a point of recognition between peers of the same stage of study, but also senior student nurses appeared to be more attuned to recognizing when a junior colleague was in need of support:

Data entry: A third year student nurse who has an assigned task with a second year peer, notices that her colleague may be struggling: *'I thought I would come over and give you a hand as I know how tough it is when you haven't done many assessments and it looked like you needed some help'.* [S2,AD3,W7] This support is welcomes by the second year student nurse. It appears early on that students see the value in having the support of peers through PAL.

Sub-theme three: Context for peer interaction and non-interaction

Here, the context of peer interaction within PAL included awareness of others who were allocated to the same clinical shift, and who were not involved, that day, in PAL. Dyad did not restricted themselves to interaction with the other peer. If there were other students on the shift, then peers would often mix with one another, a phenomenon was seen across many of the clinical areas:

Data entry: Although student nurse peers are generally assigned to each other in the area there appears to be a significant overlap with offering support to other peers within the clinical areas. This is something that has also been observed and seen with other student nurses who seem to work quite interchangeably with one another when the need arises.' [S1,CH2,CH2,CH3,W2]

During some of the quieter periods of the clinical shift, peers who may have been engaging through peer-assisted learning were called away by the qualified nursing staff and other members of the team to complete separate tasks. At such times, peers when not tasked with working together would often find opportunities to approach each other to offer their services of support and work together to find things to do, which provided a sense of community of practice among the student nurses:

Data entry: A first year student nurse is standing by the nurses' station on her own. She is approached by her peer colleague: *'Are you doing anything at the moment?'* [S1,CH1,W4]. *'No, I was just looking at what jobs need doing on the hand over sheet.'* [S1,CH1,W4] As they are not currently tasked with an assignment they make a decision to disperse together down the ward corridor to determine if they can see if there are any jobs that needed undertaking. *'Shall we take a walk and see if anything needs doing?'* [S1,CH1,W4] *'Yeah, sounds good.'* [S1,CH1,W4].

The observations also found that there was forward planning undertaken by the student nurses, whereby, those engaging in PAL would directly seek out when they are rostered to be working together; realising a positive need to encourage peer working with their colleagues:

> Data entry: A senior third year student and first year peer who are working together are located together at the nurses' station and one pulls out the student off-duty folder. Together they go through the off-duty to determine when they are next working together. They check to see how many shifts they have left until they finish the end of their placement. They make a point to note when they are working together or with another peer located on the ward and discuss this as positive aspect of the conversation: *'Ah, great, I am working with you then.'* [S2,AD1,AD3,W6].

In continuing this positive encouragement of working and interacting with peers, it was clear that peers would relate to each other in the social context, taking their breaks together and sharing respite with their peer colleagues. A friendly approach adopted between peers from a variety of levels of study, gave further indication towards the formation of a community of practice among student nurses:

> Data entry: The peer pair after working together to conduct some patient observation on the ward discuss the need to take a break and agree to go onto break together. *'I need a coffee, do you want to come?'* [S2,AD3,W6] *'That's a great idea.'* [S2,AD1,W6] The students both finish up on the clinical

tasks they set to accomplish and then make their way to the staff room for a drink.